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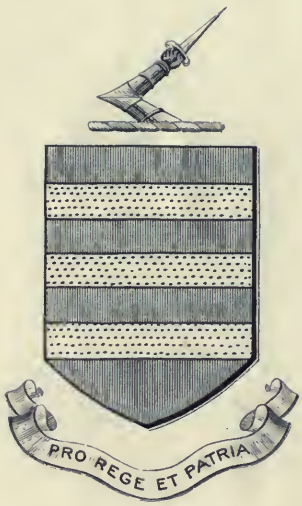

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A Weekly Medical Journal.

EDITED BY

GEORGE M. GOULD, A.M., M.D.

VOLUME LXIII.

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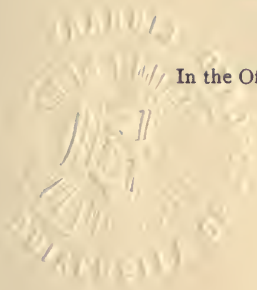

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ORIGINAL ARTICLES.

CLINICAL LESSONS.

The Treatment of Sciatica.

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

[Reported by J. M. TAYLOR, M.D., Assistant Physician to the Infirmary for Diseases of the Nervous System.]

I PROMISED that these clinical lessons should sometimes consider for you such peculiar therapeutic methods as are in use within our walls. Accordingly, I call your attention to-day to certain points in the diagnosis and treatment of sciatica.

Under this name the books include true neuralgia, without demonstrable organic changes in the nerve, and the graver pain which is due always, as a rule, to some grade of neuritis.

Let us admit that the first class is seen in practice in all degrees, has a great variety of parentage, and at times many parents, or haply none that can be found.

To men like you, advanced students, clinically watchful, it is needless to say that the milder sciatic neuralgias are sometimes of malarial, gouty, rheumatic, syphilitic, anæmic, or other origin, mere functional disorders like the typical fifth-nerve neuralgia. Be this as it may, I am sure that more often than elsewhere these pains, whatever be their cause, are likely to become permanent and to pass into distinct forms of organic disease of the sheaths, and, at last, as remoter possibilities, into neuritis, with degenerative changes in the nerve-tissue. Too often you can detect no distinct cause, or find that you must fall back for explanation on a general lowering of tone, or on relatively slight anæmia, or something as trivial in appearance. The strange causes, the reflex visceral parentages, the lucky decayed tooth, etc., are, alas! too rare, but serve at best to keep us watchful and to make the text-books less dull reading by introducing the pleasant unexpectedness of romance.

I pause here to urge on you the fact that every human being has a different standard of resistance to the effects of anæmia, malaria, or any of the varied forms of blood-defect or mal-assimilation. What does not depress one is serious for another. Also I ask you again to remember that frequently a neuralgia has many parents. Over-work, over-worry, or a hemorrhage may cause anæmia, and out of this may come functional gastro-intestinal failures, and these in turn may occasion lithæmic disturbances, or make available for mischief the effects of exposure or accident.

Possibly, at times, old and long latent syphilis is answerable. Such a case meets with a fall on the buttocks, and thus acquires, owing to the constitutional poisoning of the patient, capacities to develop an obstinate neuritis. The type and severity depend upon the hygienic surroundings and the past history. An English writer declares that he has never seen causalgia such as we saw from 1861 to 1864, nor have I so seen it since, because men worn out with marching, soaked with malaria, or exhausted with exposure and diarrhœa are not now the subjects of wounds from minie-balls.

For the unthoughtful there is only the final accident, for the man who thinks there is link on link of the chain of preparatory states, and it were easy to illustrate them further. This is, however, to be only a lecture of hints, and I pass on.

Before considering the ordinary sciaticas I pause to say a word as to sciatic pain of which the cause is organic and lies within the pelvis. You cannot be too watchful as to this source of trouble. When you find extravagant pain down the nerve, be careful how you decide. Sciatic neuritis is a very painful malady, but the pain caused by the squeeze and inflammation of rapid intra-pelvic carcinoma is a far more terrible thing, and the grade of pain may help you in your decision. In any case of doubt, the rectal examination should be thorough.

Several times in my life I have seen the causal diagnosis of a furious sciatica made on the post-mortem table, by the discovery of a saddle-like growth astride of the cords of the parent plexus. If the tumor be small, palpation is useless as a guide, and the best of us may be baffled. At times a large growth rewards our search. Twice I have seen accumulations of fæces sufficient to give rise to irritative pressure; one got well, but one, which had been treated for multiform malignant tumors, was so regarded up to death and perished miserably. The post-mortem section showed enormous fæcal accumulations of a hardness such as caused one of the assistants to think they were masses of calculi. In this case the pain was in the right sciatic nerve.

Benign tumors or growths of syphilitic origin may act within the pelvis to cause sciatic pain, as the following interesting case serves to show.

L. B., forty years of age, a planter, states that sixteen years ago he had a sore, then said to be syphilitic. He has had no secondaries of which he was ever aware, but has all his life been subject to herpetic eruptions on the glans penis. He has been, over and over, pronounced to be free from specific disease. In August, 1891, he began to have vague aches in the occiput, the right knee, and the thigh. In September, he had pain in and about the sciatic notch and down the leg. These aches became worse, especially below the knee, and at last almost deprived him of power to stand or walk. At night, after twelve, his pain was so intense that morphine became essential. His case on entry here was too easily taken for granted by me as an ordinary neuritis, and subjected to the usual treatment. When this entirely failed, I began to suspect that we were dealing with sciatica of an unusual type. In making the re-examination which this suspicion caused me to undertake, I found at the middle of the right thigh a smooth swelling of the bone. If, as seemed likely, this was a node and specific, it became clear that it was in no way competent to cause the pain. But it was as clear that there might be within the pelvis or at the notch a similar growth, so placed as to compress and irritate the great sciatic. One week of full treatment by iodides led to rapid lessening of the external node and to a swift extinction of the pain. After a few weeks he was dismissed cured.

It is also well to know that childbed may cause sciatica. I knew many years ago of one woman who always suffered from two to three weeks after labor with double sciatic pain, and at last, after a labor in which there was profuse flooding, she was afflicted with a left-side sciatica for many months. Some pain in these nerves you will all hear about in childbeds, and I may add that to strain at stool may cause increase of suffering to a patient tormented by sciatica, and even to rheumatic people who are without distinct neuritis.

Of the terrible sciatica of alcohol I need say nothing here, and that lead or arsenic may cause sciatic neuralgia of neuritic type is also to be remembered.

Strange as it may seem, one may be misled for a time as to diagnosis by a subacute inflammation of the hip-joint with aches about the knee, slight wasting, and stiffness. As between this and the sciatic pain which exists chiefly in and around the foramen of exit and has caused nutritive changes in the gluteal muscles, one may at times be troubled. At all events I have seen surgeon and physician err one way or another as to these maladies.

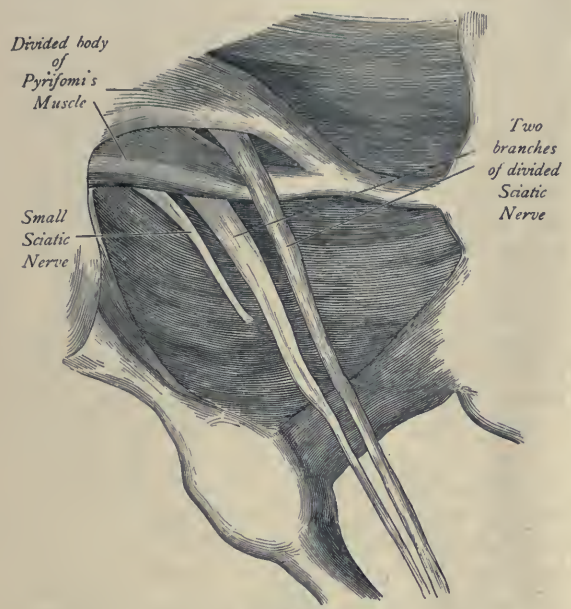
And now as to one or two matters connected with sciatic pain, before we consider the treatment of sciatic neuritis and the neuralgias likely, under conditions adverse to recovery, to eventuate in the more serious malady. I shall presume upon your full knowledge of the symptoms of sciatica. The gait, the wasting, the pain-points, and the hyperæsthesia or anæsthesia I may pass over as familiar. But look now at the case I show you from McCormick Ward. When this man entered here he had violent pain at the sciatic notch on carrying the leg forward. A case near by, now well, had pain down the leg on putting the leg far back, and at each step as the leg on which he stood was at its extreme limit of backward position. The forward swing eased him. A case seen last year fell as if shot when he stood on the lame leg, the pain darting down the limb from the notch. A few years ago I saw a still worse example of this form of pain. In this latter case, after long treatment, I found that very deep pressure at or over the notch caused acute pain. Finally, we cut down (I think it was Dr. Morton who operated) and found a small, round, hard, fibrous growth just over the point of exit of the nerve. Its removal brought about a speedy recovery. To fully extend the leg in sciatica always gives increase of pain, and some sciatic patients carefully limit the length of their step so as not to make any pull on the nerve.

Walking exercise usually makes the pain of sciatic neuritis worse. The cause is, perhaps, not as simple as it may seem to you. Of course, it is natural to presume—is, I think, generally taken for granted—that the rhythmic tension of the muscles at the notch squeezes a swollen nerve as we walk or stand, and so increases the pain.

I have taken some pains to see how far this may be true. The result of a brief study of dissections made for me by Dr. Addinell Hewson, that I might investigate the matter, proved of interest, especially as the anatomies did not make it entirely clear.

The great sciatic emerges from its foramen with ample space around it. Then it lies in an irregular triangular gutter between the tuber ischii and the great and lesser trochanters. This space is over-large and narrows or widens as inversion or eversion of the foot and leg turns the head of the bone inward or outward. Above or posteriorly, this deep gutter is covered by the gluteus maximus. At the lower edge of this muscle the deep fascia turns under it and then is reflected downward, so as to roof over the lower part of the sciatic gutter with dense covering, which is attached to the ischial tuberosity and to a part of the lesser trochanter. This fascia thus forms a strong tentorium, protecting the nerve more or less from external violence. The pyriform muscle, which overlies the nerve, is so situated that it crosses where the nerve, lying rather free in its notch, could, even if swollen, with difficulty suffer from the action of this muscle. In front of the nerve lie the quadratus and gemelli and the tendon of the obturator. When these muscles swell in such contractile effort as everts the foot, they may more or less press upon

the nerve, but the consentaneous action of the tightening mass of the gluteus must tend to enlarge the cavity in front of it and make tense its roof, so that unless immense swelling of the nerve be present the activity of these muscles could scarcely cause pinching or pressure of moment.



Anomalous high division of great sciatic nerve, one branch passing through pyriformis muscle.

Dr. J. M. Taylor called my attention to the fact that in 1600 sciatic nerves there were 49 anomalies of a nature to quite surely cause pain in a swollen nerve when the pyriformis acts. In these anomalies the nerve divides so that one part goes through the belly of the muscle—as is well seen in Dr. Taylor's sketch. As a fact, eversion or inversion of the foot rarely gives rise to increase of sciatic ache. We must look elsewhere for explanations. It seems to me probable that the forward swing of the leg in walking may be felt because at its full limit it must repeatedly stretch the nerve a little, and very little is needed to hurt an inflamed nerve. Thus, going up stairs, which stretches the nerve far more, is painful. Also, we should remember that the thigh muscles, bound down by tense fascia, must in action somewhat compress the nerve.

Whether the exceptional cases of violent anguish referred to the notch on standing are due or not to the anomalous peculiarity mentioned I cannot say.

Very rarely, it is the backward motion which causes pain, and for this I can see no explanation.

I suspect that very often the pain increased or reproduced by walking is due to more mysterious causes, which are of central origin and analagous to such as are present in facial neuralgias, when the patient chews or swallows, talks or laughs. Then there seems to arise a sudden reinforcement of capacity to feel pain on the part of the nerve-centers. It is also quite sure that certain sciatic cases are eased by exertion; probably these are not cases of neuritis.

I wish to say a few words as to the time of the exacerbations of pain in sciatica. I have studied with some care the hour of greatest pain in neuralgias, and I think I may be secure in stating that for fifth-nerve neuralgias it is likely to be before noon, and for sciatica, after 4 P.M. In many cases it is between 12 at night and 4 A.M.; these figures are the results of an examination of something like a hundred neuralgias.

Whilst this holds good for our climate, it may be quite untrue elsewhere, as in the South or in England. I mention this, because abroad the remarkable statistics of my clinics, as to chorea and our seasons, and of Dr. Morris Lewis's admirable studies, both of chorea and of rheumatism in relation to seasons, have been doubted, or described as not having been confirmed by European observers. It would be odd enough if they were, as almost inevitably the relation of pain or other morbid phenomenon to time of day, or year, must differ in one continent from another, and it is the comparative results which become interesting.

As regards this question of the time of pain-occurrence there are valuable papers by myself[1] and by Captain Catlin,[2] U. S. A., which exhibit, as concerns a remarkable case of traumatic neuralgia, a curious tendency to concentrate pain at set periods of the day.

Sciatic pain tends to be worse at night. The treatment should, so to speak, follow it into this period; and this is why I have so insisted here on the time-question.

And now, let us pass on to the treatment. If you turn to the text-books, as to this and other well-studied diseases, you will find a bewildering list of drugs, and mechanical and other treatment mentioned with the constant introduction "So-and-so has been or may be used"; also, "G recommends this, K that, in this disorder." Dropping all this puzzling list of drugs, and what not, I shall now tell you what I usually do here, and do *in succession* in these cases, as improvement or failure makes desirable. In private practice you cannot always do at once as you wish to do, or think really best. Except as to that which money brings—change of climate and the

[1] "Relation of Pains to Weather," by S. Weir Mitchell, M.D. Amer. Journ. Med. Sciences, April, 1877.

[2] "Relations of Pain to Weather, Studied during Eleven Years of a Case of Traumatic Neuralgia," by Captain R. A. Catlin, U.S A., with Notes by S. Weir Mitchell. Transactions of the College of Physicians, Philadelphia, 1883.

Memoirs of Nat. Acad. Sci., 1892. Final report by Capt. Catlin.

like—and as far as mere immediate treatment is concerned, the poor, in a hospital like this, have sometimes a better chance than the rich or highly placed, as certain illustrious precedents may prove.

If in the text-books the list of drugs and counter-irritants were followed by a clear statement of what the author advised in mild or in grave cases, these books would acquire a definite and individualized value. One may read all that Gowers, or Gray, or Dana says, and, if young in practice, rise without the least distinct idea as to just how these men treat their own cases of sciatica. You may rest assured that they are more definite in their practice than might be inferred from their books. The treatises on mere therapeutics are yet worse. In one is a list of forty agents which may be used in sciatica.

Let us say we have to deal with a mild case, a first attack. The usual careful search through the organs and secretions has been made. Any obvious constitutional disorder is provided for. What next? As to this, all are at one—rest in bed, constant and prolonged till recovery is assured. Few things are as valuable as dry cups, if you use them thoroughly and early. Very effective is a double or even a triple row of cups all around and over the notch and down the leg, along the nerve-branches to the ankle. There should be some three dozen cups simultaneously applied, and they should remain on half an hour, but not blister. This measure is repeated the next day; then two days later, and this alone may answer. Or, if for any reason you cannot do this, put on mustard, at least three inches wide, from notch to ankle; or, at least, to the knee. Add a little molasses to the mustard, and you can then leave it on for hours; and this, too, may answer. Some of the elder doctors, like Pearson, knew the fact that very extensive moderate counter-irritation is often better than limited and more severe attacks on the skin by irritants.

If these means fail, what is to be done next? As to this I hesitate no longer, but go on at once to the means I now employ in chronic cases. But, at the beginning, and perhaps later, until you can permanently ease the ache, it is needful sometimes to use narcotics. Cocaine is the best, in from one-fourth to one-half grain hypodermatic injections. How rarely we use narcotics here, even in our worst cases of sciatica, the resident physicians very well know. If you prefer morphine, give one dose at about 8 or 9 P.M., and get rid of it soon.

But suppose the disease intractable? Let us take the case in which mild irritants, rest in bed, and constitutional means have failed; or that of the old hospital guest who has carried pain with him from ward to ward this year or two.

Consider a moment the attitude and ways of a really severe case of neuritis, and let us see what guides these obviously offer. The man lies in bed with the leg slightly bent at the knee and hip. If he wishes to turn, he keeps the limb rigid—splints it, let us say, by the use of his muscles, aids it with the stay of supporting hands. Also in the exacerbations, in the anguish of the night's increase of pain, a touch, even slight friction of the bedclothes, increases the distress. It was while watching such a case that it occurred to me to use a splint to keep the limb quiet. If I could by this means forbid the use of muscles, I should thus far secure to the nerve physiologic rest, which, for many reasons, seemed desirable. If *free* motion gave pain, *all* motion might be relatively hostile to recovery. At a much later date I was struck with the familiar fact that contacts—sudden, rough touch, as of the bedclothes—were able to increase the pain in certain cases. It seemed to me as I considered the matter that all contacts might be hurtful, and that by a bandage I could secure the surfaces from these, and thus still further insure to the nerve functional repose. Finally, it was possible that the bandage might, by gentle, firm, general pressure, lessen the amount of blood circulating in the leg, and thus ease, just as one eases an aching finger by firmly grasping it. My success seems to be a justification of the reasoning; but that is of little moment. There is much good treatment we cannot explain.

There are many ways of doing these two things. But whether you suspend the leg in a splint, or use wire or moulded splints, the splint must check motion at the hip and knee. This is the essential matter. The bandage must be pure flannel, and reach from foot to groin. I have used rubber or elastic stockings, and also combined the splint with pressure by plaster or other splint dressings. Practically here we use for all true sciaticas a firm bandage from foot to groin and reapply it twice a day. The leg is slightly bent at the knee, and kept extended at the thigh, and in this position secured to a light side-splint from axilla to ankle by a few turns of a bandage. Care is, of course, taken to prevent pressure on the heel. After a few days the joint-angles are slightly changed at each dressing. Still later, as the pain fades, the joints are mildly and passively exercised whenever the bandages are renewed. Usually three weeks must pass before we can begin to abandon treatment; a much longer time may be needed for old cases. Finally, we take off the splint *in the day* but leave the bandage on. At night we replace the splint. Later we give up the splint and, with the presence or absence of pain as our sole guide, in like manner we omit the bandage, now in the day, and finally at night, but not at all until the patient has begun to move about, and perhaps not then.

Meanwhile with cod-liver oil, iron at need, good diet, care as to the bowels, never allowing a costive

passage, forbidding effort at stool (preventing it by hot enemas)—by these means, I repeat, we carry the man through. When the pain has quite gone we use mild massage once a day before replacing the bandages. The process must be careful, with avoidance of roughness.

There may be left, near the close of this treatment, one or more points of persistent pain, not often severe. These are best treated by counter-irritants, the best being the light touch of a white-hot Paquelin button, or a small blister.

The getting up of a severe sciatic case is not unimportant. Motion, the full use of the leg and buttock muscles, and the pressure of the hard edge of a chair, or close stool, are likely to bring back pain. Hence, *we do not allow a man to sit at all the first week* that he is up. He must at first stand, and then walk, but always, whether he walk or stand, it must be with the aid of crutches. He may be upright, on a bed, but not seated. Electricity is rarely needed, even if there has been much wasting. With exercise and massage, or without the latter, the muscles easily get strong.

I have said no word of the use of continuous cold so much employed here before the bandage and splint combined were found to triumph readily over most cases. It is still occasionally employed. The method I have elsewhere detailed at length in the "International Lecture Series." It gives us a resource of great value if the less troublesome plan fails; and failure is rare unless the neuritis has gone up the nerve into the sacral plexus, or unless the pain is really spinal in its origin. My former published cases involved ice and splint-rest. Those I have shown you of late were treated chiefly with the tight bandage and long splint, to which you may add ice-bags at need. The rapid gain to be had in an old case of sciatic pain out of these means—the flannel bandage, splint-rest, and ice—must be seen to be fitly appreciated, and I may add that in mild cases the tight bandage used alone is often of value. I do not claim for these simple means any such certainty as seems usually to be demanded from novel methods. I find, however, that I rarely fail, and that my colleagues, like myself, are using these means. It is with me an old treatment, for in 1872, in my book on *Nerve Injuries*, p. 72, I used these words:

"When the disease is really subacute and the nerve tender on pressure for some considerable part of its length, I insist upon the most absolute rest. If it be the leg which is attacked, the patient must go to bed and consent to wear a carved splint for several weeks. If it be the arm a splint answers to put it in a state of repose, and without this it is vain to employ other means.

Cold should be used over the nerve-track by means of Chapman's spine-bag, or better, by such as are now made by the Davidson Rubber Company, which are thinner than those of English make. The caoutchouc bag should be inclosed in a case of thin flannel, and may then be kept *in situ* by a splint and a bandage, if a splint be worn. In most instances I have used them over nearly the whole length of the main nerve, and have usually contented myself with their employment in the daytime. In some cases, however, I have had them renewed twice in the night, and this plan I believe to be the better of the two. The only difficulty lies in the first pain from cold, and is easily overcome. The relief afforded is often remarkable, and the loss of the nerve in size, hardness, and tenderness most gratifying."

The following briefly stated cases, for which I am indebted to Dr. J. M. Taylor, sufficiently illustrate my practice. Many more might have been added:

J.M., thirty-six years of age, born in Ireland, a carpenter, as a boy had some kind of bone-disease, involving the left tibia, with a purulent discharge. Eight years ago he fell forty feet, hurting his left hip. He drank rather freely of whiskey, smokes excessively, and denies venereal disease. There was no neuralgia in the leg until three years since, when it began with a dull pain in the region of the sciatic notch, and passed along the outer aspect of the thigh to the knee. The pain is now confined to the course of the left sciatic nerve; it is constant and worse at night; it is increased in the act of sitting down, and on rising from this position there is much less pain.

Examination of the various organs proved negative. A scar was found on the left leg, at the junction of the upper and middle thirds of the tibia; there is another a little posteriorly to this, and a third a little lower down; these resulted from an old sore, which finally healed ten years ago. The pupils react to accommodation and light; knee-jerks and elbow-jerks, and plantar reflexes, etc., are normal.

The measurements of the thigh, nine inches above patella, were: R., 21 in.; L., 18 in.

The thigh, six inches above the patella, measured: R., 18¼ in.; L., 16 in. The calf: R., 13 in.; L., 13½ in.

He differentiated well as to touch, tested with the æsthesiometer in the distribution of the left sciatic, also on the hands and feet; localization was good; urine analysis was negative.

The patient was admitted to the hospital February 18, 1892, in a state of extreme suffering.

The treatment ordered was absolute rest, good diet, milk between meals, iron and quinine, flannel bandage, and massage. He managed, with phenacetin, to do without opiates, and on the fourth day of treatment he ceased to feel acute pain.

On March 3d no pain was complained of and the splint was removed; the limb was kept straight.

On March 14th the weight cautiously put upon the left leg was followed by no pain on movement or pressure.

On March 30th the man was well able to move freely without pain; no cautery or treatment other than the bandage and splint was carried out, massage having been abandoned early. He had a slight

relapse on the 16th, owing to his having risen incautiously and without a crutch, to assist a patient. This was a clear case of sciatic neuritis, with much wasting.

DOUBLE SCIATICA.

K. P., a porter, fifty-seven years old, a German; married, with seven children; was never ill until December, 1891, when he had what he describes as a bilious attack, which kept him abed three weeks. He broke two ribs three years ago. There was no evidence of syphilis. In October, 1891, he had a rheumatic swelling of the right ankle. A little later the pain extended up the line of the posterior tibial nerve, and generally along that of the main trunk. It was worse upon exertion, and was eased by recumbency. Nevertheless, he went on with his rather heavy work until, after exposure to wet, the pain became far worse and the knee somewhat stiff. At times he could no longer walk, and had also aches in the back and in the left leg.

In August he had severe cramps in both legs, and limped increasingly. Still, under dire pressure of need, he continued to work. Late in August he had solar exhaustion, and at the Pennsylvania Hospital was treated by ice-rubbing. This, he thinks, chilled him severely. The next day intense pain arose in the left leg, grew worse, and he became able to work only intermittently. The pain now (October 14th,) on admission, is very severe over the right sciatic and in the thigh and the calf of the right leg. There is, also, pain on pressure, but none in the sciatic notch or in the popliteal space. In the left leg pain is very marked on pressure along the entire course of the sciatic. There is no pain in the back.

Measurements.—Thigh: R., 18 in.; L., 16 in. Calf: R., 13½ in.; L., 13 in. Dynamometer: R. hand, 125; L. hand, 125.

The knee jerks on both sides are normal, and there is no clonus; the elbow-jerks on both sides are normal, and there is no impairment of muscle-jerks; sensation is everywhere good; the heart, lungs, kidneys, etc., are normal. To stand long occasioned pain in both legs, especially in the thighs; walking is difficult and painful. In November, 1892, on taking charge, I found this man in bed, having had elsewhere many forms of treatment, all unsuccessful. He was ordered full diet, rest in bed, with flannel bandages to both legs. On the third day he became nearly free from pain. Thereafter the usual changes as to splint and bandage were made. It seems needless to repeat them.

On December 2d he was allowed to walk a little on crutches, but not to sit down. Two pain-points in the upper thigh were lightly cauterized. He was discharged December 12, 1892, apparently well. This appears to have been a case of true double sciatica, probably rheumatic. I learn that he is now (April 1st) well and at work. The immediate effects of the splint and bandage were very gratifying.

G. C., sixty-five years of age, is a machinist; he drinks and smokes moderately; is very rarely ill. During the War he had "camp fever." He denies venereal history. He is married, with five children living and four dead. Suddenly, six weeks ago, pain began in the left hip and leg; the left foot feels asleep quite constantly; the pain grows worse at night, on change of weather, on rising from a chair, and while walking or going up steps.

The man is pale and thin and has the gait of one in much pain; the left leg is held stiffly. The left knee-jerk is slightly in excess of the right. Pressure over the left sciatic notch causes pain, and also along the course of the nerve. He was admitted to the hospital March 5, 1892, and was ordered absolute rest in bed, flannel bandages, straight splint, extra diet, milk, iron, and cod-liver oil. On March 10th the report says that the pain disappears in the daytime, but remains at night, sufficiently, at times, to keep him awake. On March 13th all pain has disappeared, except a soreness over the external condyle of the femur and external malleolus where it is in contact with the splint. He now sleeps well. On March 18th all pain is lost, even upon deep pressure. On March 21st the splint is removed in the daytime, but the limb is to be kept in extension and quiet. The splint was applied at night until the 26th inst. The bandage was constantly used, and he walked with crutches. He has had slight relapses, necessitating the use of the splint for a day or two. On March 28, 1893, he was discharged, well—a rapid recovery.

October 14, 1892. P. G., fifty years of age, had sciatica and erythromelalgia. The family history was negative. He was a married man with six children, all well. In the army he had a bad attack of measles followed by dysentery, and later typhoid fever; he was ill five months. After the War he had malarial fever. Seven years after the first attack of dysentery he had a second attack which lasted five years, during which time he passed much blood and mucus; most of this time he continued at work and often voided twelve stools daily. In the last five years the man had been pretty well. He had never had any special injury, but has not been very strong since the last attack of dysentery. He worked as a lumberman for five years, being out in all weathers. In January, 1889, he began to work in the coal mines. Since his army life he has had some fleeting rheumatic pains now and again. The present trouble began January, 1889, while at work in the mine, with severe shooting pain in the right arm and shoulder, noticed while at rest, but disappearing on motion. This lasted three weeks. He sleeps habitually on the right side and had need to keep the arm flexed. One month after this, pain began in the left hip, shooting down the course of the sciatic to the calf and ankle, and being of greatest intensity from the knee to the ankle. He was then confined to bed four weeks; on the slightest movement the pain was much increased; this gradually lessened, but the man was unable to work for five months. He describes the pain, when it began, as a "burning and crawling sensation in the right leg, as if the flesh was on fire"; this continued in both feet in very severe degree; he could place his right foot on the floor, but not the left one, on account of excessive pain. After two months' treatment he had improved, but was unable to work for five

months. He was pretty well until January, 1892, at which time pain of similar kind, but more severe, attacked the back and left hip, seeming to warp the body to the left side. Much pain was caused by any attempt to straighten the body, shooting down the left leg into the foot and toes. He was again confined to bed for four months. He was in the Jefferson Hospital in May, 1892, for five weeks. He finally was well enough to go home, but could not walk, and on arriving the pain grew worse. Since May, while standing with the left leg pendent, the blood seemed to accumulate in the foot and leg up to the knee and cause intense pain.

The left leg is noticeably shrunken and flabby; there is considerable pain on pressure over the sciatic notch, with soreness over the calf muscles; but none in the popliteal space; there is no shortening of the limb. The foot is red and hot.

Measurements.—Thigh: R., 17 in.; L., 15 in. Calf: R., 12½ in.; L., 11 in.

There is slight clonus in the left leg; but none in the right; the knee-jerks on both sides are normal; the plantar and skin reflexes are normal; there is slight hyperæsthesia in the left leg below the knee; the heart, lungs, etc., are normal; the bowels are inclined to be loose and irregular; the appetite is fair; the digestion poor.

This man, while in the standing position, declares himself unable to allow his heel to touch the ground, asserting that it would pain so increasingly and furiously as to "drive him wild." There is also pain on pressure over the entire sole of the foot; pressure also caused an intense flushing of the surface.

The treatment ordered was absolute rest, flannel bandages, the straight splint; massage, except to the left leg; cod-liver oil, malt, extra food, iron, quinine, and strychnine.

On October 26th the pain was so intense that ice was applied. On December 2d, the vasomotor difficulty not lessening satisfactorily, the left leg and foot were elevated. Internally, sodium phosphate was ordered, forty grains, in hot water, an hour before meals, to relieve the constant catarrhal condition of the stomach.

On December 19th the man was very much improved in respect to the sciatic pain; he gained in weight and vigor, and he was allowed to go home on the 20th, as he declined to remain longer. He still wore the flannel bandage and used crutches. The flushing of the foot was not better; the hyperæsthesia of the member was little altered. As usual in my sad experience of erythromelalgia, nothing did much good for the foot, although heat, cold, electricity, and massage were used with care, and I give the case as it left us, because of the great gain in the sciatic pain, which, if not well, was vastly bettered by local rest and the bandage. The long elevation of the leg and foot seemed to make the nerve-tracks more tender, a result which I have seen before and since, nor did it help the vasomotor complications. I presume this man to have a quite distinct case of erythromelalgia, with sciatic and terminal neuritis.

You may with reason ask what I do if the treatment by splint-rest and bandage, or by splint-rest and ice, fail. At first, to clear my experimental therapeutics from needless doubt, I used these means only in cases which I was sure were sciatic neuritis, and this alone. I have elsewhere recorded the results.[1] Of late, and since I felt secure as to my process, I and others have used these means in cases of more dubious nature—in double leg-pain, in those who had certainly troubles in the lower cord. In such examples of sciatic pain of central origin there have been many failures to record—many cases in which splint-rest did no good, or little. In the true sciatic cases which finally defy all medical means, there remains for consideration nerve-stretching. I have seen it fail when my own milder means succeeded. I believe that when surgical nerve-stretching is employed we should at once follow up its use by that of the roller and splint-rest. Some of the relapses which follow its successful use have, I am sure, been due to neglect of the precautions with which in every case of neuritis I desire to surround my patient. In conclusion, I desire to add that I do not look upon splint-rest and the bandage as certain to cure all sciaticas; but as sure to relieve or cure most cases, and as valuable adjuncts to whatever other means becomes desirable.

SUPRA-PUBIC CYSTOTOMY IN TWO STAGES.

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SUPRA-PUBIC cystotomy for the removal of stone in the bladder, the operative treatment of intravesical tumors, or the formation of a temporary or permanent fistula in obstructive diseases due to enlarged prostate, has become a legitimate and permanent procedure in surgery. The technique of the operation is destined to undergo improvement. Distention of the bladder and rectum renders the prevesical space more accessible, and Trendelenburg's position is of great value in all supra-pubic intra-vesical operations. If the bladder itself is healthy, the high entrance into the organ for therapeutic purposes can be effected with little or no immediate or remote risk to life. In such cases the ideal after-treatment would be suturing of the vesical and external wounds, thus placing the parts in a condition for healing of the visceral wound by primary intention. Such a result has been obtained only in exceptional cases, even by surgeons of large experience and specially skilled in the performance of the operation.

[1] International Lecture Series.

Attempts have been made to prevent contact of septic urine with the recent wound by resorting to drainage of the ureters after supra-pubic cystotomy. C. Willems[1] advocates this practice, which, he states, is a delicate yet perfectly practicable procedure. In hypogastric lithotomy it is advisable, whenever union of the wound in the bladder is important and subject to prejudicial influences—in fact, whenever the urine is unhealthy and septic. The ureters should also be drained after the removal of a vesical tumor, whether by hypogastric or perineal incision. The wound is thus protected from contact with morbid urine, and antiseptic plugging of the vesical cavity is permitted.

The patient is placed in the Trendelenburg position, the pelvis being raised about fifteen inches from the table. The abdominal viscera no longer press the walls of the bladder in contact, and the trigone can readily be seen through the hypogastric incision. A catheter, with a Y-shaped extremity, is then passed backward through the urethra. The two branches are next introduced into the ureters. The procedure is a delicate one; the upper part of the mucous fold over the orifice of the ureter must be seized with forceps of the kind used for fixing the conjunctiva oculi. Otherwise the very movable vesical mucous membrane may be pushed forward. As the vesical part of the ureter is a narrow funnel, the passage of the catheter needs skilful manipulation. The ureter tolerates the catheter very fairly. In a case of Pawlik's the woman tolerated its presence for forty-eight hours; in Schede's (operation for utero-vaginal fistula), for seven days; and in Albarran's (also a woman), for ten days. The catheter thus allows full time for perfect union of the vesical wound.

This after-treatment is too complicated and difficult for the average surgeon, and in many cases of septic cystitis it is not applicable. Most surgeons have, therefore, discarded primary suturing of the visceral wound and rely on drainage and healing by secondary intention. Healing of the wound usually takes place in from four to eight weeks. Future research and experience will undoubtedly enable us to devise some means by which primary healing of the wound will be the rule and not the exception in such cases, and thus shorten the period of recovery to a minimum. The matter is, however, entirely different when supra-pubic cystotomy is performed in a case in which the bladder is the seat of a septic cystitis, and such cases most frequently require the services of the surgeon. The adipose and loose connective tissue in the prevesical space, which constitutes a considerable part of the supra pubic route into the bladder, is exceedingly susceptible to infection with pathogenic microbes. The urine in such cases is ammoniacal, toxic, and irritating, and, when brought in contact with the prevesical tissues, exceedingly prone to cause necrosis. The pus-microbes contained in decomposed, putrid urine find in the prevesical space the most favorable conditions for the exercise of their specific pathogenic properties. Under such circumstances the wound frequently becomes the seat of sloughing and phlegmonous inflammation, in spite of the most rigid precautions. Suturing of the margins of the vesical wound to the abdominal incision furnishes no protection against this complication. The same can be said of drainage of the bladder and packing of the wound with iodoform-gauze. I have lost two patients from extensive sloughing of the prevesical and paravesical connective tissue. In one case the post-mortem showed that the base of the bladder was nearly separated from the surrounding tissues by extensive necrosis of the adipose and connective tissue interposed between them. It has occurred to me that this source of danger might be successfully avoided by performing the operation in two stages, and I have resorted to this modification in a number of instances, with most gratifying results.

The modification of the operation that I propose is based on the familiar surgical fact that granulating surfaces furnish an almost absolute protection against infection. The first operation is performed under the influence of an anesthetic. The rectum and bladder are distended in the usual manner. The field of operation is rendered aseptic, and the bladder is exposed freely, by dissecting away the prevesical fat over an oval surface about two inches in length and half as wide. After arresting the hemorrhage the wound is firmly packed with iodoform-gauze. The external dressing should be securely fastened by strips of adhesive plaster, which are made to encircle the pelvis and which prevent the dressing from becoming displaced. At the end of five days the dressing and iodoform-gauze are removed, and the bladder is distended and incised without the use of an anesthetic, if it is intended to simply establish a supra-pubic fistula, or if a small stone is to be removed. More serious intra-vesical operations would require the use of an anesthetic. If the wound has remained aseptic it will now be found covered throughout by a layer of active granulations. These granulations have closed the connective-tissue channels, and have shut out from the wound the balance of the prevesical space. If no anesthetic is used the surface of the wound is brushed over with a 5 per cent. solution of cocaine five minutes before the operation. The bladder and rectum are distended in order to render the anterior wall of the bladder more accessible. The bladder is in-

[1] Annales de la Soc. de Médecine, Ghent, 1892.

cised and drained in the usual manner. The septic urine is harmless to the granulations, and thus the dangers of the operation are minimized.

It must be admitted that in patients greatly debilitated by the disease that rendered the operation necessary, the immediate risk of the operation is greatly diminished by performing it in two stages. Another great advantage accruing from this modification of the operation is that at the time the second step is carried out the wound is already in a favorable condition for definite healing. For the purpose of illustrating the value of this modification of performing supra-pubic cystotomy in affections of the bladder complicated by septic cystitis, I will briefly report two cases that have recently come under my observation.

Case I.—A. L., an obese man, aged sixty-eight years, had been suffering for two years with symptoms indicative of the presence of stone in the bladder. Frequent micturition, severe pain after each act, and occasionally slight hematuria, were the most prominent symptoms during the first year. About a year ago cystitis set in, with gradual and progressive aggravation of symptoms. The quantity of pus and mucus in the urine increased, and the patient's general health became greatly impaired. At the time of his admission into the Presbyterian Hospital he was extremely anemic, with rapid and feeble pulse and impaired appetite. The quantity of urine secreted during twenty-four hours varied from thirty to forty ounces; the specific gravity was 1012; the secretion was ammoniacal, and contained large quantities of pus, mucus, and bladder and renal epithelia. The filtered urine was found to contain a considerable amount of albumin. It was evident that the morbid process had extended to the pelves of the kidneys by an ascending inflammation. The prostate was enlarged, and a stone in the bladder was readily detected by the introduction of Thompson's sound.

The patient was suffering excruciating pain, and begged to be relieved by an operation as soon as possible. Salol was given in five-grain doses four times a day, and the bladder was washed out twice a day with a solution of boric acid. A concentrated liquid diet and daily warm baths constituted the remainder of the preparatory treatment. At the end of a week of such treatment, the first part of the operation was performed. Chloroform was used as an anesthetic. After washing out the bladder, ten ounces of boric acid solution were injected, and the same quantity of fluid was used to distend Trendelenburg's rectal bag. The supra-pubic region was thoroughly disinfected, and the bladder exposed in the usual manner. The prevesical fat was dissected away over an oblong vertical space two inches in length and an inch in width at the middle. No ligatures were required. The wound was packed with iodoform-gauze in such a manner that the margins of the external wound were separated at least an inch and a half or two inches. The external dressing was retained in place by strips of adhesive plaster which encircled the pelvis. The bladder was evacuated, and the rectal pouch removed.

The symptoms were not aggravated by the operation, and the patient recovered promptly from the immediate effects. Five days later the dressing and tampon were removed, and the whole wound was found covered by a layer of active granulations. The anterior wall of the bladder presented the same appearance as the remainder of the wound. The wound was freely brushed with a 5 per cent. solution of cocaine. The bladder and rectum were distended as before, and the granulating part of the anterior wall of the bladder was brought within easy reach. Little, if any, pain was experienced by the patient when the bladder was incised. A large phosphatic calculus was found above and behind the prostate. The stone was removed in pieces, as it broke into numerous fragments when it was grasped with the forceps. The interior of the bladder was sacculated, and presented the typical appearances of long-standing cystitis. A large drain was introduced into the bladder, and the space between it and the granulating wound was packed loosely with iodoform-gauze. The whole operation was performed with the greatest facility, and was not productive of much pain. Although the patient died about a week later of uremia, the wound remained in a satisfactory condition. The granulations retained their vigor, in spite of being continually irrigated by the ammoniacal septic urine.

Case II.—The second patient was a young man, twenty-five years of age, born in the South, where he had always lived until recently. He had been operated upon for stone in the bladder in October, 1891. It appears that the rectum was wounded at the time, as a urethro-rectal and a urethro-perineal fistula remained. Evidently, recurrence of stone in the bladder took place within a few months after the operation. For nearly a year he had suffered from intense vesical distress. He was admitted into St. Joseph's Hospital, March 15, 1893. His general health was not much impaired. Urination took place on an average every half-hour. The urine was ammoniacal and heavily loaded with pus and mucus. The perineal fistula communicated with the opening in the rectum and urethra. The stone was detected as soon as the steel sound entered the bladder. Rectal examination revealed a hard mass just above the prostate, which was evidently a large stone in a sacculated part of the bladder. The vesico-rectal septum at this point was exceedingly thin. It was found impossible to pass the sound over and beyond the stone.

The conditions in this case precluded any other operation but supra-pubic cystotomy. The patient was carefully prepared, but owing to the existence of the fistulous opening near the neck of the bladder, it was found impossible to distend the organ in advance of the operation. When the perineal opening was closed with clamp-forceps, the fluid escaped into the rectum. I had, therefore, to cut down upon an empty, contracted bladder. The rectum was distended in the usual manner. The space between the peritoneum and the pubes was limited, rendering the

approach to the bladder difficult. The bladder was contracted, and its walls much thickened. A large, soft phosphatic stone was found in the *bas fond* of the bladder, which had become sacculated, and held the stone firmly in place. The greater part of the stone was removed in fragments with a lithotomy spoon. The mucous membrane at the base of the bladder was incrusted with phosphatic deposits. After thoroughly cleansing the bladder by irrigation, a large drain was introduced into the deepest part of the bladder, and the space between it and the wound was packed with iodoform-gauze. The patient rallied well from the immediate effects of the operation, but in spite of the most careful precautions, extensive sloughing of the margins of the wound and the prevesical tissues occurred, which, for a few days, imperilled his life. After the elimination of the necrotic tissue, healthy granulations made their appearance, and from that time the case progressed favorably.

These two cases speak for themselves. In both instances the stone in the bladder had become the indirect cause of septic cystitis. In the first case the patient was old, extremely anemic, marantic, and was, at the same time, suffering from a fatal renal complication, and yet the wound did not become a source of danger, because the incision in the bladder and the extraction of the stone were postponed until the external wound had become protected by a wall of granulation-tissue. In the second case, the patient was a young, robust man, and yet in spite of the most painstaking precautions, the fresh wound became infected by the septic urine, with extensive sloughing, constituting an imminent source of danger to life.

A study of these cases and the remarks that I have made lead me to formulate the following conclusions for further deliberation :

1. Necrosis and phlegmonous inflammation of the margins of the wound and the tissues in the prevesical space (cavum Retzii) not infrequently occur as complications of supra-pubic cystotomy, if the operation is performed for affections complicated by septic cystitis.

2. Supra-pubic cystotomy in two stages greatly diminishes, if it does not entirely overcome, this source of danger.

3. In the first operation, the bladder is freely exposed in the usual manner, when the prevesical fat is dissected away over a vertical oval space at a point corresponding to the location of the proposed visceral incision, after which the wound is packed with iodoform-gauze, and the external dressing is applied in such a manner that it cannot become displaced.

4. The incision in the bladder and the intravesical operation are postponed until the external wound has become covered with a layer of active granulations, which usually requires from four to six days.

5. The second operation can be performed with the aid of cocaine, without general anesthesia.

6. This modification of supra-pubic cystotomy diminishes the immediate risks of the operation, and affords protection against a number of serious *post operationem* complications.

STOMACH-WASHING IN INFANTS.[1]

BY HENRY E. TULEY, A.B., M.D.,
OF LOUISVILLE, KY.

SINCE the recommendation by Epstein,[2] of Prague, in 1880, of irrigation of the stomach for the treatment of the gastro-intestinal diseases of infancy and childhood, this procedure has been gradually more and more extensively used. It was not, however, until his second report in 1889, at Wiesbaden, before the meeting of the Association of Naturalists and Physicians, that the real value of the measure became recognized. To Dr. A. Seibert,[3] of New York, is due its introduction into this country, who, at a meeting of the Section of Pediatrics of the New York Academy of Medicine, in November, 1888, presented the first report on the subject, comprising a series of cases of acute dyspepsia, and of acute and chronic enteric catarrh, with vomiting, in infants between seven weeks and one and one-half years of age, which were successfully treated by lavage, with and without medication.

Though extensively used for the past four years in New York, comparatively little is known of the measure elsewhere in this country. The object of this paper is to call attention to this valuable therapeutic procedure, to describe the necessary apparatus and its application, and to briefly state the indications for its use, with the report of a few cases.

The apparatus used in stomach-washing consists of a not too flexible soft-rubber catheter, No. 13, American scale, about twelve inches in length. This is attached to a bit of glass tubing, two or three inches long, through which the contents of the tube can be observed in their passage. The glass tube is attached to another rubber tube, and this finally to a glass or hard-rubber funnel, with a capacity of from one to three fluidounces.

Plain lukewarm water, previously boiled, is the only fluid that should be used. Generally not more than one pint is required to wash out the stomach thoroughly.

The child is seated upright in the nurse's lap, its arms being secured under a rubber sheet, with its head resting on the right arm of the nurse, and inclined slightly forward. The child's tongue is depressed with the left forefinger, and the tube is passed back-

[1] Read before the Kentucky State Medical Society, May 10, 1893.

[2] Prager medicin. Wochenschr., 1880. No. 45.

[3] Archives of Pediatrics, December, 1888.

ward into the pharynx, advantage being taken of the child's gagging (which will occur from titillation of the pharynx) to pass the tube rapidly into the stomach. In most cases no oil or vaselin is needed; the tube should simply be wet before its introduction.

There is often some gas in the stomach, and if water is poured in the funnel immediately upon the descent of the tube, the fluid may be prevented from flowing into the stomach by the presence of gas in the tube, and not by an obstruction at the eye of the catheter, as one might imagine. A glance at the glass tubing will suffice to show whether the tube is filled or not. This difficulty is obviated by elevating the funnel as high as possible, perhaps for half a minute, to allow the gas to escape. After the stomach has been filled, the funnel is depressed below the level of the viscus, to allow its fluid contents to siphon out, after which one or two funnelfuls of water are again allowed to flow in, to be immediately siphoned out, as before.

There may be lumps of curds which at first are too large to pass through the catheter. These can often be broken up, and dissolved, by again and again passing water in and out until the particles pass readily through the tube; or, if this cannot be accomplished, the child may be made to vomit by the side of the tube by over-distending the stomach with water. In this way masses of leathery curds and thick, tenacious mucus may oftentimes be brought up, which would otherwise have required repeated washings to disintegrate, if, indeed, that could have been accomplished at all.

The stomach of a healthy nursing infant, for the first few months of life, is generally empty two hours after feeding; that of an artificially-fed infant requires, perhaps, a little longer, say two and one-half hours; but in cases of indigestion curds are sometimes washed out four or five, and even eight, hours after feeding, the period of stomach-digestion varying with the character of the milk, the age, and the health of the patient.

Should there be present considerable prostration and urgent thirst, as is often the case in acute processes, one or two ounces of water left in the stomach will afford relief, and the water will frequently not be vomited, as it might be if given by mouth, as has been shown in a series of cases of obstinate vomiting treated by gavage in the New York Infant Asylum during 1892.[1]

The *diet* after stomach-washing and its method of administration are very important. *No food* should be given at all for at least two hours after the washing, and then only the blandest and most easily digested.

If the child is artificially fed, it should be placed on malted milk for twenty-four or thirty-six hours after the irrigation, not more than half an ounce being given at the first feeding. If a nursing infant, and breast-milk is vomited after the stomach is washed, malted milk may be tried for twenty-four hours, in small amounts, and the breast-milk then resumed.

After washing out the stomach, Epstein puts children on albumen-water (made by dissolving in two pints of water the whites of two eggs, first beaten up in water, then filtered) for twenty-four or thirty-six hours, and then allows them gradually to return to the breast.

In the past two years, in the New York Infant Asylum, where the data on which this paper is based were obtained, there have been fully 1500 stomachs washed, and in no case has any evil resulted, or any contra-indication been noted. The procedure is easily carried out, though it may seem like an operation of magnitude to those unfamiliar with its technique.

The following is a *résumé* of the history of forty-five cases of stomach-washing during the mid-summer

[1] Kerley: Archives of Pediatrics, February, 1892.

months of 1891, records of which were carefully kept. The average age was ten and one-half months. Ten were fatal cases of entero-colitis, with high temperature, prostration, etc., and vomiting. Stomach-washing effectually controlled the vomiting in five cases. Of the remaining five cases, in one the autopsy showed extensive ulceration of the stomach at the pyloric extremity; one had suffered from chronic vomiting from birth; and in three both gavage and stomach-washing failed to control the vomiting. In thirty-two cases there was acute dyspepsia. In twelve of this number there were intestinal symptoms; in six of these the temperature was above 100°. In all cases but one, from two to three washings were found necessary to control the vomiting. In the remaining twenty cases, in which the temperature was 100° or below, with the exception of two cases (requiring two washings), only one irrigation was necessary.

Three were cases of chronic vomiting from birth, which was controlled by from one to three washings. In all of the foregoing cases the same precautions as to diet, as already related, were carefully carried out. The following are illustrative cases:

CASE I.—Louisa F., a well-nourished child, fifteen months old, had been fed on Mellin's food, and was gaining in weight. On the afternoon of July 6th she was given bread and Mellin's food, which had been standing uncovered in the hot ward. She soon after vomited quantities of curds, and during the remainder of the afternoon had six thin and yellow movements. At eight o'clock there was quite marked prostration, the face being drawn and anxious, and quite cyanotic, and the temperature being 103°. Nothing could be retained, food causing gagging and retching. The stomach was washed shortly afterward and two ounces of warm water left in the viscus; this was not vomited. Quantities of fine curds were removed by the washing. After a two hours' rest, the child was fed during the remainder of the night on malted milk at intervals of two hours, only one ounce being given at a feeding. There was but one stool during the night and no recurrence of the vomiting. From this time the child went on to perfect recovery.

CASE II.—Joseph L., a robust, breast-fed baby, aged eleven months, had gained rapidly in weight. On July 23d his mother was away from the Asylum on leave all of the day, the child, in her absence, being fed on partially peptonized milk. At 11.30 P.M. the mother returned, and the child greedily emptied in a short while both breasts, which were filled with milk. During the remainder of the night it vomited, five times, curds and sour milk, and had three thin and yellow stools. At nine the next morning the temperature was 100°. Lavage was practised and quantities of sour-smelling curds removed. Two hours later, at its first feeding, one ounce of malted milk was given. During the afternoon the child was nursed as usual, with no recurrence of the vomiting. There were no subsequent symptoms, and the child made a good recovery.

CASE III.—Lulie J., a poorly nourished breast-fed child, seven weeks old, on the evening of July 20th was reported as having vomited part or all of every nursing during the day, the ejected material being curdled and sour. The temperature was 100°, and the child had had two normal stools. The stomach was washed, a few curds and considerable mucus being removed. Nursing was stopped, and after a rest of one and one-half hours malted milk was given and continued until July 22d. During the night of the 22d the child was nursed twice, and vomited after each nursing. The stools were good and the temperature normal. The little patient was again put on malted milk for twenty-four hours after stomach-washing, the nursing being then gradually resumed. The child made a good recovery and had no more vomiting.

The best results in stomach-washing are seen in cases of acute dyspepsia, in the initial stage, with or without diarrhea and with no fever. Rarely is more than one irrigation necessary.

Lavage is indicated in acute gastro-enteric catarrhs, with vomiting and fever. Usually two washings are necessary, rarely more than three or four. The irrigation improves the tone of the stomach and diminishes the number of stools. It is a valuable and effectual means of combating a troublesome symptom in gastro-intestinal diseases, as it mechanically rids the stomach of accumulated milk and curds, which, unless removed, would pass into the intestines and give rise to irritation.

Lavage is of use in cases in which vomiting has been present from birth, or in which there has been continual regurgitation of food, as it removes curds and thick mucus, the presence of which is nearly always associated with disordered digestion. In some cases it may be found necessary to continue the lavage for perhaps two weeks, at first washing once each day, then every other day, and so on as required; but in the majority of cases vomiting is relieved in from one to three washings repeated on successive days. Stomach-washing is by no means a panacea in controlling this oftentimes troublesome symptom, nor does it preclude other treatment. It is far better than emetics (the disadvantage of which has long been recognized in the treatment of indigestion in infants) and, if properly practised, is a simple, effective, and thorough mechanical procedure, and, as far as I have seen in a rather extensive experience with it, is entirely without danger.

In private practice some objections are raised to its use, as to all new measures; but these, I am sure, will not be offered when once the great benefits derived from its application are seen.

111 WEST KENTUCKY STREET.

CLINICAL MEMORANDA.

SARCOMA OF THE RIGHT LUNG DIAGNOSTICATED DURING LIFE BY THE USE OF THE MICROSCOPE; SECONDARY TO SARCOMA OF THE TESTICLE WHICH HAD BEEN REMOVED FOUR YEARS PREVIOUSLY.[1]

BY D. W. PRENTISS, M.D,
OF WASHINGTON, D. C.

W. H. H. was fifty-one years old. His parents had been healthy. His father was killed in a saw-mill. His mother died of pneumonia, aged sixty-three years. There was no history of malignant disease or of tuberculosis in the family. The man's health had been failing for five years.

When a child he injured his testicle, and again later when riding; but this never troubled him. Five years before his last illness the testicle was again hurt, when it became inflamed and the man was confined to bed for some time, suffering great pain. After this he had to exercise great care of the organ. The testicle was removed four years previously to death by Dr. J. Ford Thompson, who pronounced it sarcomatous.

Pulmonary symptoms appeared in August, 1890. The man had had a very profuse hemorrhage from the bowels in January, 1890. He complained of great pain in the right side over the liver. There was slight cough and bloody sputa, though no large hemorrhage from the lungs had occurred. The sputa were frothy, stained with blood, and occasionally mixed with a fibrinous substance.

I first saw the patient March 29, 1891. He had been under the care of a sectarian practitioner, and had been treated for pulmonary tuberculosis for about nine months.

When I saw him he was greatly emaciated; suffering with pain in the right side of the chest; and coughing and expectorating bloody sputa. At first sight he presented all the appearances of tuberculosis. Physical examination, however, showed a condition evidently not due to pulmonary tuberculosis. The left lung appeared normal on auscultation and percussion. The right lung was solid throughout nearly its entire extent. Air could only be heard to enter the lung in two small areas, one near the apex and another low down in front in the lower lobe. At these points at the autopsy were found respectively a little normal lung-tissue and a small cavity resulting from the breaking down of the diseased tissue.

The sputum was sent to Dr. Theobald Smith for examination for tubercle-bacilli, but none were found.

The principal symptoms in the case were the cough and expectoration, great pain in the side from the pleuritic extension of the disease, extreme emaciation and exhaustion. Decubitus was mostly left-sided. As the case progressed bedsores developed over the hips and sacrum, which added greatly to the patient's suffering.

Treatment was symptomatic—excepting that at the first the man was put on a mixed specific treatment of potassium iodid and mercuric chlorid. There was no clinical evidence of specific disease, but upon a suspicion that there might possibly be a syphilitic taint this treatment was tried. It was continued for about three weeks without effect. Other treatment consisted of morphine (to relieve pain), stimulants, and tonics.

The right side of the chest was enlarged and the intercostal spaces obliterated.

Dr. J. Ford Thompson was called in consultation and the side aspirated, to determine if there was liquid in the pleural cavity. None was found, but instead, only blood and a quantity of substance looking like partially organized fibrin was drawn out, evidently from the lung-substance.

This substance was sent to Dr. Theobald Smith for microscopic examination, and reported by him to be composed of masses of sarcoma cells.

Up to this time malignant disease of the lung had not been thought of, but the diagnosis now became clear, especially when inquiry brought out the fact that a sarcomatous testicle had been removed four years before. The patient died of exhaustion, August 21, 1891, one year after the first symptoms of lung-disease developed.

The autopsy was made four and a half hours after death by Dr. Robert E. Edes.

Emaciation was most extreme.

The whole right lung was sarcomatous. There was a pus-cavity at the lower border containing about two ounces of pus. Nearly the whole lung was bound to the chest-wall and to the diaphragm by strong adhesions. The fourth, fifth, sixth, and seventh ribs were eroded posteriorly by pressure. The upper part of the right lung contained several patches of healthy tissue anteriorly, but the remainder of the lung was replaced by sarcomatous tissue, old, hardened blood-clots, and fibrin. The left lung was healthy, except in the upper part of the lower lobe, which was solidified and grayish in appearance. The right kidney was normal; the left kidney congested, otherwise normal. The spleen was small, but normal. The intestines were normal. There was no enlargement of the lymphatic glands of the abdomen. The liver was normal. The gall-bladder was full of bile. The heart was small and flabby.

The accompanying letter gives the results of the microscopic examination:

DR. D. W. PRENTISS.

MY DEAR DOCTOR: Microscopic examination of sections of the supposed sarcomatous testicle and lung proves the growth to be the same in each organ. The sarcoma is of the variety known as lympho-sarcoma. The sections will not take an intense nuclear staining, which is doubtless due to slight post-mortem degeneration. Yours truly,

W. M. GRAY,
Microscopist, Army Medical Museum.

I have been influenced to report this case on account of its comparative rarity, especially in private practice, and also as illustrating the value and importance of the microscope in diagnosis.

As to its rarity, this is the only case I have seen in a private practice of thirty years; although hospital statistics show malignant disease of the lungs not to be uncommon.

When only one lung is affected it is more frequently the right, in the proportion of 2 to 1.

[1] Read before the Association of American Physicians, at Washington, D. C., May 31, 1893.

Walshe records 29 cases of primary malignant disease of the lung, in only 18 cases of which one lung was affected, and of these 18 the right 13 times and the left 5 times. Kohler reports 31 cases, one lung being affected in only 23; the right 15 times; the left 8 times. The condition is more common in men than in women. Hasse reports 22 cases; 17 in men, 5 in women. (*Ziemssen's Cyclopedia*, vol. v, p. 436.)

Osler, however, states that malignant disease of the lung is more common in women.

Malignant disease of the lung is principally to be differentiated from tuberculosis. The possibility of syphilis should not be overlooked.

DIFFERENTIATION FROM TUBERCULOSIS.

TUBERCULOSIS.	MALIGNANT DISEASE.
Begins usually at apex of left lung, and extends to right lung.	Begins usually in middle lobe of right lung.
Sputa muco-purulent, nummular.	Sputa gelatiniform, mixed with pus and blood, "prune-juice."
Cavities.	Intense dulness over whole lung.
	Swelling of lymphatic glands more marked.
Tuberculous diathesis.	Previous history of malignant disease, as in breasts or testicles.
Tubercle-bacilli.	Sarcomatous or carcinomatous cells.

The only other condition that produces the same extent of intense dulness in the lung is a large collection of fluid in the pleural cavity. This is recognized, of course, by aspiration.

As to syphilis of the lung, its extreme rarity alone is almost enough to set it aside.

Tuberculosis of the lung in a syphilitic subject is common enough—in fact, a distinguished syphilographer (Dr. Taylor, of New York) stated recently that the two diseases go hand-in-hand; that syphilis precipitates pulmonary tuberculosis in a predisposed patient. But syphilis of the lung, as a distinct form of disease, does, however, exist, many cases having been reported, and the early symptoms are much like those of malignant disease of the lungs. The diagnosis may be determined by the therapeutic test.

Finally, it is worth noticing that a man could live, as this one did for months, with such an extent of disease within the chest-walls.

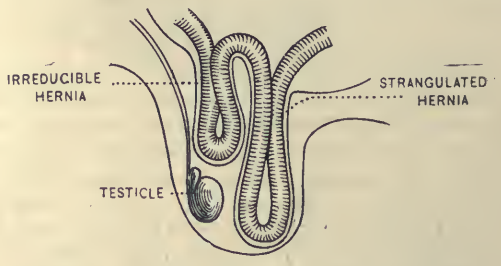
DIRECT AND OBLIQUE INGUINAL HERNIA ON THE SAME SIDE.

BY R. W. STEWART, M.D., M.R.C.S.,
SURGEON TO MERCY HOSPITAL, PITTSBURG, PA.

J. M., thirty-five years old, was admitted to Mercy Hospital, October 23, 1892, suffering from a large scrotal hernia on the left side, which had been strangulated for three days. The patient gave a history of having been ruptured five years ago, and of wearing a truss since that time, until the present hernia descended into the scrotum and became strangulated. The characteristic symptoms of strangulation were present. The material vomited had a fecal odor, the pulse was rapid, and the general appearance of the patient indicated the near approach of collapse, and the urgency of immediate operative interference.

The patient was at once prepared for operation, in which I was assisted by my colleague, Dr. Buchanan, and the house-surgeon, Dr. Stelwagon. The man being anesthetized, and the pubes and scrotum shaved and rendered aseptic, the hernial sac was opened by a longitudinal incision extending from the external ring downward for a distance of five inches, and exposing the hernial contents, consisting of a coil of small intestine, about nine inches in length, which was quite black, but not gangrenous. The constriction, which was at the external ring, being divided, the gut was drawn downward, in order to examine the points of constriction and to assure ourselves of the vitality of the intestine before it was replaced within the abdomen.

At this time it was noticed that there was a peculiar bulging forward of the posterior wall of the sac, caused by a mass the nature of which it was difficult to determine. In order to perform the radical operation for hernia the sac was dissected up to the internal ring, exposing at the bottom of the wound the mass already



Diagrammatic representation of the relative position of the hernias to each other.

referred to. The weight of evidence was in favor of this mass being an old irreducible hernia, and a point was selected where, if it was a hernia, it was thought the sac would not be adherent to its contents. This was carefully incised, exposing within a coil of intestine, the walls of which were so thickened and its surface so altered by firm adhesions to the sac as to be almost unrecognizable. With considerable difficulty the adhesions were broken down. The finger could then be passed with facility between the gut and its sac, and the continuity of the latter with the parietal peritoneum demonstrated. When the gut was liberated from adhesion to its sac it became distended with gas. It was then replaced within the abdominal cavity.

The sacs of both herniæ were tied as high up as possible and cut off, and the common pedicle of both sacs was sutured to the pillars of the ring and the wound closed in the ordinary manner.

The subsequent course of the case was marked only by the development of an orchitis and sloughing of some of the connective-tissue bands that were torn in dissecting up the two hernial sacs.

The chief point of interest in this case is the presence on the same side of two inguinal herniæ, one of which was strangulated and the other not. The explanation given by Dr. Buchanan at the time of the operation seems the most rational one. He thought that the hernia that had been formed five years ago was a direct

inguinal one, that it had never been reduced, though during this period the patient had constantly worn a truss. The gut in the meantime had, however, become firmly adherent to the sac. The strangulated hernia was probably of recent origin, and had descended obliquely through the inguinal canal.

WESTINGHOUSE BUILDING.

POISONING BY OIL OF CEDAR.

BY F. K. BROWN., M.D,
OF PHILADELPHIA.

MRS. P., twenty-three years old, married, having one child and being pregnant three months, took half an ounce of oil of cedar at 10 o'clock P.M. In an hour she was seized with vertigo and a sensation of pins and needles all over the body, immediately followed by a convulsion lasting three minutes and attended with loss of consciousness, rigidity of the body, frothing at the mouth, stertorous breathing, and bilious vomiting.

Ten minutes after the first convulsion there followed another, lasting about ten minutes and attended with the same symptoms as the first, except that the vomited matter was thin and watery at first, afterward resembling coffee-grounds, and finally becoming almost black. There was no diarrhea and no micturition.

When I saw the woman, two hours after she had taken the oil of cedar, she was apparently unconscious, but by vigorous shaking could be aroused. Her face was pale, her expression anxious, and she was somewhat delirious and much afraid that she would die. The skin was cold and clammy; the pulse was rapid and weak, scarcely perceptible at radial artery; the first sound of the heart could be but feebly heard.

Respiration was rapid. There was still a little vomiting of coffee-ground material, and complaint of severe bearing-down pain as though her pelvic organs would be expressed. I at once administered hypodermatically strychnine sulph., grs. $\frac{1}{30}$, and prescribed: ℞. Bismuthi subnitratis, gr. xx; strychninæ sulphatis, gr. $\frac{1}{30}$; morphinæ sulphatis, gr. $\frac{1}{6}$; M. S. Every hour. I also ordered spiritus frumenti, ʒij, every twenty minutes, and hot blankets and hot bottles to be applied to the extremities.

In an hour the patient was much improved. There had been no vomiting for half an hour. The pain was much less and the heart-sounds were much clearer, with a pulse of 90. The respirations were twenty-two per minute. The skin was warm and moist. The prescription of bismuth, strychnine, and morphine was continued every three hours. The whiskey was discontinued. Ten hours later I found the woman out of bed. She maintained that she felt as well as usual. There had been no more vomiting and there was no pain, but she stated that a dark-colored discharge took place from the vagina, which continued until the end of pregnancy. There was suppression of urine for thirty-six hours. The patient did not miscarry, but went to full term, and was delivered of a full-sized but not healthy-looking child.

Arnold Paltauf, Professor of Medical Jurisprudence in the German University of Prague, died May 27th, of malignant disease of the naso-pharynx, at the age of thirty-two years.

PRECOCIOUS PREGNANCY.

BY J. ROBERT BUCHANAN, M.D.,
OF NEVADA, MO.

THE following case is remarkable solely on account of the unusual youth of the subject at the time of parturition.

Mrs. Maggie P., white, of Pike County, Mo., was born September 29, 1864. She was married October 25, 1877, being at the time thirteen years, twenty-six days old. She was delivered on May 30, 1879, at full term, after a normal but somewhat protracted labor, of a healthy, well-developed male child, weighing nine pounds, being then fourteen years, eight months, and one day old. She was a remarkably well-developed young woman, weighing about one hundred and thirty-five pounds. She began menstruating at the age of twelve years. At the time I congratulated myself upon having delivered the youngest woman in my State; nor have I yet met with a physician who has delivered a younger.

MEDICAL PROGRESS.

Periods of Incubation and Infectivity.—A supplement to vol. xxv of the *Transactions of the Clinical Society of London* contains a "Report on Periods of Incubation and Contagiousness in Certain Infectious Diseases" (*British Medical Journal*, No. 1688, p. 958):

Diphtheria.—Eighty-seven cases were considered. In 27, the exposure to infection was for a short period, on a single occasion; in all, with a single exception, in which the facts were doubtful, the period of incubation was seven days or less. In 63 cases the period was four days or less. If to these are added certain other cases, in which the dates at which exposure commenced are positively known, and the sets of cases are taken together, it appears that in 30, or 58 per cent., the period of incubation cannot have been more than four days, while in 45, or 87 per cent., it cannot have been more than seven days. In the large majority of cases infection was attributed to personal intercourse with a sufferer or convalescent. A person may be infected by a patient suffering with diphtheria (*a*) in the incubative stage, (*b*) during the developed attack, (*c*) for a brief period of long, but uncertain and probably varying duration after apparent recovery. In cases of late infection some unhealthy condition of the throat will, as a rule, be found to have persisted, or possibly to have recurred. The evidence further showed that the infective principle of diphtheria can be retained by clothes, carpets, and other fomites for months, perhaps years. It appeared also that infection may take place from cases that seem so mild that the patient never comes under medical treatment, or presents symptoms so little characteristic that their true nature is not recognized even after medical examination.

Enteric Fever.—Seventy cases were considered. In 14 the infection was traceable to a single short exposure to the liability of infection; in 15 other cases the period of incubation must have been less than fourteen days. The conclusion was reached that the interval between

exposure and the development of distinct symptoms is probably most often from twelve to fourteen days; not infrequently it is nine or ten days, occasionally eight, and possibly even less. In rare cases, it is prolonged to fifteen, eighteen, or even to twenty-three days. A case of enteric fever remains infective throughout the whole course of the disease, from the date of the earliest symptoms of the illness until convalescence has been established for at least a fortnight. Evidence is afforded that infection can be conveyed by fomites, and be retained in them probably for at least two months.

Influenza.—The conclusions reached are: (1) that the period of incubation varies from a day, or possibly a few hours less, to four or five days, but the usual period is four or five days; (2) that a patient is capable of conveying infection throughout the whole course of the disease, from the onset of the earliest symptoms, and even after convalescence has been established sufficiently to enable him to resume ordinary occupations a week or ten days at least after the commencement of his illness.

Morbilli.—In 36 cases the exposure to the source of infection was for a short known period, only a few minutes or hours. In 19, or 52 per cent., of these the subsequent interval before the appearance of the rash was exactly fourteen days. In 28, or 78 per cent., the period was thirteen, fourteen, or fifteen days. In three cases only, did the period exceed fifteen days. The evidence afforded by cases in which the period of exposure was not precisely limited confirmed the conclusion that fourteen days is the usual period between the exposure and the occurrence of the rash. Intervals of sixteen, seventeen, and eighteen days probably occur occasionally. In rare cases the interval may be as short as seven days. The duration of the primary, or catarrhal stage, is not constant, and bears no relation to the total duration of the interval between exposure and eruption. It is concluded that the true period of incubation of measles, that is, the interval between exposure and the earliest symptoms, is, in a majority of cases, nine or ten days, but it may be as short as five or even four days, and as long as fourteen. Cases are quoted to show that measles is infectious, not only during the primary stage and throughout the acute attack, but also in some cases after convalescence has been well established, but no period beyond three weeks after the appearance of the rash was met with in which disinfection had been practised. There was evidence that the infection may be retained by fomites for a short time.

Parotiditis.—In 14 cases of single short exposure, the period of incubation was three weeks; a day or two more or a day or two less, in 10. It is occasionally as long as twenty-five days, and more rarely, as short as fourteen days. The likelihood of infection diminishes progressively from the onset of the attack, and will have ceased in two weeks probably, and in three weeks almost certainly. The disease is most highly infectious during the prodromal stage, which is of uncertain duration, and may last as long as four days.

Rubeola (*Rötheln*).—The conclusion is reached that the period of incubation is, as a rule, to which there are many exceptions, more than two and less than three weeks, and that eighteen days is probably the usual period. In a considerable number of cases it is a day or two less than two weeks; in a few it is only eight or nine days; and it is possible that in a small number it may be as short as six or five days. The patient is infective two or three days before the rash appears, and also while the rash is out, but thereafter infectivity diminishes rapidly, and ceases altogether in a week in mild cases, and by the time desquamation is over in the more severe cases. There is little evidence that the infection is long retained by the clothes.

Scarlatina.—One hundred and forty cases were considered. In 34 the exposure to infection was for a short period, measured by minutes, or at most, hours; and in 12 of these the period of incubation cannot have exceeded forty-eight hours. In 19 of these cases (more than half) the period was less than three days, and in no case was the appearance of the eruption delayed beyond the eighth day. It is concluded that the period of incubation is some time between twenty-four and seventy-two hours; it is occasionally less than twenty-four hours, and frequently more than seventy-two hours. Periods of four, five, and six days are often met with, and of seven days occasionally, but it is doubtful if the period is ever extended to eight days. When the infection is conveyed by milk the period seems, as a rule, to be short—two days or less. Infection persists from the onset of symptoms until long after convalescence has been established certainly as long as there is any desquamation; it may still be active eight weeks after the onset of the disease; it is readily preserved and conveyed by fomites.

Surgical and Puerperal Scarlatina.—There is no proof that the period of incubation is longer or shorter in persons that have been injured, or in women recently delivered; but there are grounds for believing that the occurrence of labor or of traumatism may determine the onset of scarlatina in persons that had previously been exposed to infection without taking the disease. The infection of scarlatina may be conveyed by persons that do not themselves suffer—doubtless in their clothes. The symptoms of scarlatina may be very anomalous, or little marked, and, especially in the adult, may consist only of sore-throat; the infection of the disease is particularly likely to be distributed by such cases.

Variola.—The period of incubation is commonly twelve days (from exposure to initial symptoms), but it is not infrequently a day more or a day less. It is only occasionally nine or ten days, and sometimes fourteen or, perhaps, fifteen days. Smallpox is infectious from the onset of the initial symptoms, and until all scabs are cleared off, but it is much more infectious during the height of the active stage of the disease than during the initial illness. The infective principle can be retained and conveyed by fomites, and by the hair of a person that has been in intimate relations with a patient suffering from smallpox.

Varicella.—The period of incubation of varicella appears to be a little longer than that of variola. It is usually fourteen days, but may be a day less or four or five days more. The infection may be derived from a patient at least as soon as the rash appears. A convalescent patient may convey the infection to others. The infection may probably be conveyed in clothes.

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SATURDAY, JULY 1, 1893.

THE DIAGNOSIS OF CHOLERA.

THE study of the large amount of material afforded by the last epidemic of cholera has cleared up many obscure points concerning the disease. The researches in the field of bacteriology have taken the foremost place, and the methods of investigation have been so vastly improved that, in skilled hands, it is now possible in a doubtful case to make a certain diagnosis of cholera within twenty-four hours.

Perhaps one of the most striking results is to be found in the conclusions that have been arrived at with regard to the possibility of the existence of choleraic infection without clinical symptoms. From what was known of epidemic diseases in general, it had been surmised that during the prevalence of the disease probably very mild cases of cholera occurred frequently and were overlooked, but it remained for bacteriology to demonstrate that such profound differences in the intensity of the infection as were seen in the last epidemic could occur. The fact that in more than one instance virulent cholera-bacilli have been found in the solid feces of apparently healthy men, far from throwing any doubt whatever upon the comma-bacillus as the causative agent in cholera, rather indeed helps to establish its relation to the disease, as these mildest cases of choleraic infection never occur outside of groups of individuals who have been equally exposed, and among whom severe cases of the disease exist; on the other hand, its significance from the point of view of prophylaxis can hardly be overestimated.

ROBERT KOCH,[1] to whom will be generally conceded the best right to speak on this subject, insists upon these points, together with others, and details minutely the methods pursued at the Institute for Infectious Diseases under his care at Berlin in the bacteriologic diagnosis of cholera. It has been found that the original gelatin-plate method is defective (1) because the time required for the making of a certain diagnosis was at least two days, and (2) in that when only a few cholera-bacteria were present they could easily be overgrown by other bacteria and escape observation. The ideal method must, therefore, enable us to make a sure diagnosis in a very short space of time.

KOCH maintains (*first*) that in 50 per cent. of the instances it is possible, simply from microscopic examination of cover-slip preparations, to reach a definite conclusion within a few minutes after the reception of the suspected material. The cholera-bacteria are often present in the small mucus-flakes almost in pure culture, and are then seen in characteristic groups, the single bacilli pointing in the same direction presenting an appearance compared by KOCH to a school of fish in a slowly running stream. In the absence of these clumps, if curved bacilli resembling cholera-bacteria are found associated with no forms except those that resemble the bacilli coli, the diagnosis is still tolerably sure. Nevertheless, in every doubtful case, or to confirm the diagnosis made by microscopic examination, some of the material is (*secondly*) planted in a sterilized 1 per cent. watery solution of sodium chlorid and peptone rendered distinctly alkaline by the addition of sodium carbonate. Since the demonstration by HESSE that the cholera-bacteria require large quantities of oxygen for their development, advantage has been taken of this property in order to separate these organisms from others less strictly aërobic. If a tube of the peptone solution be inoculated with feces containing even a few cholera-bacteria, and be kept in the thermostat at a temperature of 37° C. (98.6°), there will be found after from six to twelve

[1] Ueber den augenblicklichen Stand der bakteriologischen Choleradiagnose. Zeitschr. f. Hygiene u. Infektions-krankheiten, 1893, Bd. xiv, Heft. 2, p. 319.

hours *at the surface of the liquid* an almost, if not a perfectly, pure culture of cholera-bacteria.

The next step (*thirdly*) is the inoculation of a good 10 per cent. gelatin culture-medium, which is poured into plates and kept in the thermostat for from fifteen to twenty hours at a temperature of 22° C. (71.6° F.). If there have been any doubt as to the peptone cultures, gelatin plates are also made from these. *Fourthly*, sterile agar which has been poured into Petri dishes and kept in the thermostat for some days until the fluid which always separates has evaporated, is inoculated and kept for eight hours at a temperature of 37° C. (98.6°F.). *Fifthly*, the cholera-red reaction may be obtained in a culture in peptone solution containing a definite amount of nitrates. The sulphuric acid employed must be free from nitrous acid, and the cultures must be pure. *Sixthly* and finally, injection of pure cultures into the peritoneal cavity will prove fatal to guinea-pigs, in the proportion of 1.5 mgr. ($\frac{1}{48}$ of a grain) of the solid culture on agar (in about 15 minims of bouillon) to 10 or 12 ounces of body-weight.

Curved bacilli other than cholera-bacteria, but morphologically resembling them, occur only with great rarity in the feces of human beings, and, when they do, are easily differentiated by the indol-test and by the animal experiments. In water, however, comma-bacilli are met with very frequently indeed, but can always be distinguished from the genuine cholera-germs by the methods now at our command. In making a study of suspected water 1 per cent. of sodium chlorid and the same amount of peptone are added to 100 c.cm. (about 3 ounces) of the fluid, and the solution placed in a thermostat at a temperature of 37° C. (98.6° F.). At the end of ten, fifteen, or twenty hours agar is inoculated from the peptone culture and poured into plates. The study of the colonies may be then further continued in the manner already outlined.

It will be necessary in future during epidemics, as well as at their beginning and close, to carry on extensive bacteriologic examinations, as it is even more important in cholera than in diphtheria to keep the patients isolated after all symptoms have disappeared until the causative microörganisms are no longer present in the body. We may congratulate ourselves that, in this country, our larger hospitals are more and more asssociating themselves closely with pathologic and bacteriologic laboratories, and that it is becoming generally recognized that not only for the carrying out of research-work, but also for the practical application of the means we already possess for the prevention of the spread of disease, it is essential that the work of the skilled clinician shall be supplemented by that of the bacteriologist.

BOOK REVIEWS.

In his address as President of the American Medical Editors' Association, published as an editorial in the *Journal of the American Medical Association*, Dr. J. C. Culbertson expresses certain opinions on the subject of book reviews in medical journals, from which we must in a measure dissent. Among other things, he says: "I would suggest that book reviews should be limited to the briefest possible acknowledgment of the receipt of a volume. Medical bookmaking is a manufacturing and commercial business, and as such should continuously patronize the advertising pages of our journals. . . . I have no hesitation in saying that the long laudatory book reviews should cease to appear. They strangled the *London Medico-Chirurgical Review* and badly choked the old *Quarterly American Journal of Medical Sciences*."

Apart from the fact that "medical bookmaking" in the proper sense, however much it has been and is abused, is not merely "a manufacturing and commercial business," Dr. Culbertson confounds two distinct things—"laudatory" notices (long or short) of the nature of advertisements of medical books, and genuine reviews. The critical examination of books that assume either to represent the present status of knowledge in any department of medicine and its allied sciences, or to contain new facts or new theories that constitute an advance in knowledge, and the impartial and candid expression of the result of that examination, is one of the highest and most responsible functions of the medical journal. Thus only can error be held in check and due acknowledgment of merit rendered. Honest and truthful reviews by competent writers are of the utmost value to publishers, to authors, and to the profession. Acquainting the latter with the scope of a work and the manner in which the task assumed by the author has been performed, they enable judgment to be formed as to the advisability of purchasing it. By pointing out mistakes of judgment as to arrangement or choice of matter, calling attention to errors of inadvertence in writing or proof-reading, or to graver errors of insufficient knowledge, they

enable the author to make subsequent editions better, and help to keep the reader from being misled. By debating statements open to question, they assist in bringing the truth to light.

The knowledge that their books must stand trial at the bar of critical judgment deters careless and incompetent writers from indulging themselves too freely in the luxury of reckless statement, and the approval of the well-informed reviewer is one of the greatest satisfactions that falls to the lot of the careful and competent author. The reviewer must, of course, be guided only by truth and justice—not by personal favor or dislike, and not by commercial considerations or relations with publishers.

It is the unvarying custom of The Medical News to place books submitted to it in the hands of members of the profession of known fitness for the responsible duty of reviewing, with no other suggestion than an intimation of the space available. This space we try to proportion to the importance of the book; but we are often compelled to lament that the exigencies of a newspaper limit our ability to give good books all the space they deserve, or to take the space required to point out the errors of books more pretentious than worthy.

The best reviews that have ever been written were those in *The American Journal of the Medical Sciences*. It has been well said that from them alone, should the books be lost, the history of medical progress could be reconstructed. Many of the best-informed men in the profession regret that the change of the *American Journal* from quarterly to monthly involved some abridgment in the space devoted to reviews in that journal; though we believe that it can still justly claim a high degree of merit for the character and comprehensiveness of the work of its critical department.

For the commercial puffs, long or short, which our esteemed contemporary miscalls reviews, we have only profound contempt. They are on a par with editorial and other reading notices of pharmaceutic and other manufactures. We shall indeed be glad when these disappear, and the honest judgment of competent critics, expressed briefly as may be, takes their place.

EDITORIAL COMMENTS.

A Standing Committee on Cholera.—The opinion attributed to Surgeon-General Wyman, of the Marine-Hospital Service, that this country has an even chance of escaping cholera this year, and that, if the disease should reach our shores, it is not likely to become epidemic, is shared by most sanitarians. The absence, up to the present time, of any general outbreak in Europe is a favorable circumstance. Clear views as to the etiology and prophylaxis of cholera on the part of medical men and the wide dissemination of this knowledge among the people justify the hope that no general epidemic will ever again occur in the United States. Such immunity, however, can only be obtained at the price of untiring vigilance.

Strict quarantine and local sanitation must be constantly maintained. The experience of last year warrants the expectation that, despite its theoretic shortcomings, our quarantine is adequate to protect our shores at the principal ports of entry under ordinary circumstances of cholera-transportation.

The success with which our local boards of health shall be able to protect us in the event of the disease gaining actual foothold upon the seaboard remains to be seen. It will be measured not so much by the efficiency of the boards themselves as by the coöperation of the profession and, through it, of the citizens of any given municipality.

The best attainable sanitary condition in advance and always and the promptest recognition and management of first cases are essential measures of prophylaxis.

It is scarcely to be hoped that, under existing conditions of want of sanitary organization and scattered population, this country can cope with epidemic diseases, and particularly with cholera, as ably as the British Isles; but we are far from powerless in the matter, and the circular just issued by the Standing Committee on Cholera of the College of Physicians of Philadelphia, inviting the coöperation of the profession in the detection and abatement of unfavorable local conditions, and foreshadowing a closer and more active organization, should cholera actually appear, is a move in the right direction.

The Diagnosis of Dilatation of the Stomach.—The last decade has witnessed a great advance in our knowledge of the diseases of the stomach, and our means of diagnosis in this department have been considerably extended. A better and fuller understanding of the chemism and physiology of this important viscus has laid the foundations for a rational and successful therapeusis. One of the most troublesome of the disorders of the stomach that are not directly mortal is gastrectasis. The diagnosis is simple when the dilatation has reached an advanced degree; but the results of treatment will be in direct ratio to the earliness of the recognition of the condition and the application of appropriate remedial measures. In a recent communication upon this subject, Aufrecht (*Centralbl. f. klin. Medicin*, No. 23, 1893, p. 474) describes two physical phenomena that he has observed in a large proportion of cases of gastrectasis at an early stage, and to which, in conjunction with other symptoms, he attaches considerable diagnostic significance. The first of these consists in a variation in the percussion-note: a gentle blow struck over the stomach in the same situation will at one time be dull, and at another tympanitic. This phenomenon is to be ascribed to the more voluminous and more energetic peristaltic contraction of the hypertrophied wall of the stomach. The

second sign consists in a cracked-pot sound upon percussion over the stomach, which is best elicited at the junction of an area of circumscribed dulness and the adjacent tympanitic area. This is to be explained by the vibration of the volume of air in a portion of the stomach undergoing relaxation secondary to preceding contraction. There seems to be reason to believe that the hypertrophy of the wall of the stomach, upon which both of these phenomena are supposed to depend, precedes for a variable time the occurrence of dilatation.

Medical Legislation in Connecticut.—Connecticut, too, has fallen into the line of medical progress. Its State Legislature has recently passed a bill providing for the appointment by the State Board of Health of three Examining Committees, each to consist of five physicians selected by the Connecticut Medical Society, The Connecticut Homeopathic Medical Society, and the Connecticut Eclectic Medical Association, respectively. Each committee is to frame its own questions and conduct its examinations in writing, and both questions and answers are to be placed on file with the State Board of Health. Applicants for the privilege to practise need but be graduates of medical colleges that are recognized as reputable by any one of the chartered medical societies of the State. The license confers the privilege to treat, operate, prescribe, or practise surgery or midwifery "only in the kind or branch of practice as stated in the certificate of registration." The sectarians are already complaining that the State examinations, even as conducted by three boards, are excluding an undue proportion of their disciples. It would be a mortal blow to make them practise what they preach.

A Peculiar Form of Nasal Obstruction.—Attention has been called to the fact that the current of air through the nares may be obstructed by the approximation of the structures of the alæ nasi with those of the septum narium as a result of deep inspiratory effort. The tendency to this form of closure is increased by the recumbent posture, especially during sleep. When the interference with the aëration of the blood reaches a certain degree the sleeper is aroused, and full inspiration affords temporary relief. This condition may be a source of annoyance, if not of real danger, during the inhalation of ether or chloroform, for purposes of anesthesia. It seems to be dependent upon an enfeebled condition of the dilators and levators of the nose. The introduction of a small body like a shirt-button is sufficient to relieve the obstruction.

A Course of Instruction in Sanitation and Hygiene.—In addition to the activity in professional circles in connection with the institution of measures calculated to prevent the introduction and dissemination of cholera, the American Society for the Extension of University Teaching announces that a course of instruction in sanitation and hygiene has been arranged, to be conducted by Dr. John S. Billings and Dr. A. C. Abbott, Director and First Assistant, respectively, in the Laboratory of Hygiene of the University of Pennsylvania. The course is to open on July 6th and to continue for twelve days at 8.30 A.M.

SELECTION.

"THE CITY OF MAGNIFICENT HOSPITALS."

AN American contemporary proudly asserts that New York might well be called the "City of Magnificent Hospitals." The reason which has led to this outburst of praise is the fact that three new large hospitals are in process of erection in the city, while a fourth is shortly to be commenced. No other city in the New World, we are informed, "can compare in extent with the palatial character and the scientific completeness of its hospital buildings," and "when these various new structures are completed they will form, taken in connection with the other institutions, a magnificent tribute to human philanthropy and medical science." But it is quite possible to have too much of a good thing, even of philanthropy. What have the general practitioners, or, as they are called in the States, "physicians," to say upon this subject? Can they possibly hail with acclamation the foundation of four new hospitals in New York, when the establishment of each institution of the kind must conceivably reduce the number of their private patients? New York may be a "city of magnificent hospitals," but whether the policy has been a sound one which has made it so is entirely another matter. Upon the whole, quite possibly the profession generally would be prepared to dispute the expediency of all this lavish expenditure upon hospitals; both on professional as well as on public grounds, the facilities for charitable relief should be kept within due bounds.—*Medical Press and Circular*, June 7, 1893.

REVIEWS.

INFLUENZA: ITS PATHOLOGY, SYMPTOMS, COMPLICATIONS, AND SEQUELS; ITS ORIGIN AND MODE OF SPREADING, AND ITS DIAGNOSIS, PROGNOSIS, AND TREATMENT. By JULIUS ALTHAUS, M.D., M.R.C.P. Lond.; Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park. Second edition, much enlarged. 8vo, pp. 401. London: Longmans, Green & Co., 1892.

MUCH new matter has been added to this admirable study, and it is further enriched with a copious reference-list to the literature of the past three years. It is a contribution to medical history that will have permanent value, and none the less so that it is well indexed. The author elaborates and brings new facts to support his theory that "grippo-toxin" acts as a depressant to the central organic nervous system.

We are glad to note the due prominence given to sanguinolent discharges from the nose among the diagnostic points. Indeed, we have found alarming epistaxis a most troublesome complication in many cases. The richest portion of the book is that dealing with the psychoses, paralyses, and other neural sequelæ of influenza. The section on treatment is unsatisfactory by reason of its fulness. Many authors are quoted, and uncritically, though often their recommendations are worthless. We are disappointed to find not only no clear note of warning against the dangers of antipyretics, but even to see them advised.

We have no doubt that antipyrin was responsible for much of the mortality that figured in death-certificates as heart-failure or influenza. It is true that the author recommends the safeguarding of antipyrin by digitalis—but the better practice is to give neither.

Handbook of Materia Medica, Pharmacy, and Therapeutics. By Samuel O. L. Potter, A M., M.D., M.R.C.P. Lond. Fourth edition, revised. Pp. 781. Philadelphia: P. Blakiston, Son & Co.

The exhaustion within thirteen months of the third edition of Dr. Potter's Handbook, and the demand for a fourth, is in itself sufficient proof of the merited popularity of this work. The features of the book which have done so much to make it a favorite textbook on Therapeutics remain materially unaltered in the present edition. Changes, however, have been made, and the entire text has undergone a thorough revision. The book is essentially one of the accepted materia medica, and only such of the newer remedies as have risen into popular favor because of well-established therapeutic value have been admitted. The omission of such agents as hydrogen dioxid, pyoktanin, the strontium salts, is, however, criticisable. A special and very practical feature is the section on Applied Therapeutics, occupying at least a quarter of the contents of the volume. The book is a thoroughly good one.

Psychopathia Sexualis, with Especial Reference to Contrary Sexual Instinct. A Medico-Legal Study. By Dr. R. von Krafft-Ebing, Professor of Psychiatry and Neurology, University of Vienna. Authorized translation of the seventh, enlarged and revised, German edition. By Charles Gilbert Chaddock, M.D. Philadelphia: The F. A. Davis Company, Publishers.

In its original language this work has long been well known by physicians. One cannot help wondering if its publication in English may not be a somewhat hazardous step, in view of the fact of its possible dissemination among the laity, always sharply on the lookout for facts of the kind. Although these facts are here given with evident scientific motive and manner, it is indeed a large gathering of peculiar morbid, mental, and emotional sexual histories that should be as little known by the unscientific as possible. The translation is well done.

Lessons in Physical Diagnosis. By Alfred L. Loomis, M.D., LL.D. Tenth edition, revised and enlarged. New York: William Wood & Co., 1893.

As a specimen of bad bookmaking it would be hard to excel the publishers' portion of this work. Poor paper, insufficient margins, and execrable illustrations detract from the pleasure with which one should read or study Dr. Loomis's admirable exposition of his subject. A tenth edition has passed beyond the domain of criticism. It is only to be said that the gifted author has brought his book fully abreast of the advanced knowledge of the day, without forgetting the teachings of the past. It is a book well worth the having, giving briefly, but without important omission, the principles and practice of the various methods of clinical examination by the unaided senses or with instruments of precision, and elucidating the diagnostic and pathologic significance of the information so obtained.

The Johns Hopkins Hospital Reports. Report in Pathology, III. Vol. iii, 1893, Nos. 4, 5, 6.

This report contains five interesting contributions. Simon Flexner records two cases of multiple lymphosarcoma, in the lesions of which he found round, oval, or slightly irregularly-shaped bodies, which he thinks may be sporozoa, and of etiologic significance. Henry J. Berkeley contributes a most interesting and elaborate histologic study of the cortex of the cerebellum of the dog; W. T. Councilman reports a case of chronic nephritis in a cow, with the results of a histologic study; H. L. Russell considers the relation of bacteria to vegetable tissue; William T. Howard presents an analysis of 105 cases of hypertrophy of the heart from the autopsy records of the Johns Hopkins Hospital. Taken altogether, the report is a most creditable and valuable one.

Elementary Physiology for Students. By Alfred T. Schofield, M.D., M.R.C.S. 12mo, pp. xii, 372. Philadelphia: Lea Brothers & Co., 1892.

This little volume is neither more nor less than its title implies. It would be difficult to believe that it is intended for medical students, although it will find a useful place among the text-books employed in high schools and normal schools. It is most skilfully put together, and a vast deal of ground is covered without cumbersome verbiage or unnecessary discussion. The language is clear and perspicuous. The arrangement is natural and consecutive. The typography is excellent. The illustrations are numerous and well executed. The book deserves to become popular.

Transactions of the American Pediatric Society, Fourth Session, Held at Boston, Mass., May 2, 3, and 4, 1892. Edited by William Perry Watson, A.M., M.D., Recorder. Volume IV. Pp. 276. Bailey & Fairchild, 1893.

This book does not now call for extended review, as Dr. Osler's presidential address, with its caution against a too narrow specialism, has been published in The News, and most of the admirable papers have, during the year, been abstracted or commented upon in this journal or elsewhere. As a whole, the volume is creditable, and the papers on diphtheria especially are of permanent value.

Transactions of the John Guitéras Medical Society of Undergraduates, University of Pennsylvania, 1892–1893. Philadelphia: University of Pennsylvania Press, 1893.

This little brochure contains an address by the patron of the society, and a dozen communications of interest by members of the society and professors, and other instructors in the University of Pennsylvania, and reflects much credit on all concerned.

SPECIAL ARTICLE.

THE STATE OF PREPARATION OF NEW ORLEANS AGAINST AN INVASION OF CHOLERA.

BY F. W. PARHAM, M.D.,
OF NEW ORLEANS, LA.

THE state of preparation of New Orleans against an invasion of cholera may be considered under two heads:

A. Quarantine arrangements against the introduction of the disease.

B. The sanitary safeguards in the city itself.

A. The quarantine establishment of New Orleans consists of the following stations:

1. That at Port Eads, at the head of South Pass.

2. The Lazaretto, in Pass à l'Outre, an unused pass, out of the way of all incoming ships.

3. The Mississippi River Quarantine-station, situated about ninety miles from New Orleans.

4. The Rigolets Quarantine-station, on the strait between Lakes Borgne and Pontchartrain.

5. The Atchafalaya Quarantine-station, near Morgan City.

The fourth controls all approach through Mississippi Sound and Lake Borgne into Lake Pontchartrain, and the fifth keeps guard over all vessels from the Gulf up through the Atchafalaya. Comparatively speaking, these latter stations may be regarded as unimportant, as our great danger of cholera importation *by sea* lies in the Mississippi River. Our reference, in this paper, will therefore be to the quarantine-establishments in the river, as carried on at the three stations enumerated. We shall discuss these in the order named.

1. Port Eads. No vessel from any quarantinable port is allowed to come into the river during the night. All such vessels are boarded in daylight by the Medical Inspector of the State Board of Health of Louisiana. If this officer finds no reason to suspect a ship, she is given free pratique and comes on up to the city. If cases of infectious disease are found on board, the ship is sent at once to the Lazaretto, to be there treated according to the regulations at that station.

2. The Lazaretto. This is the infectious-disease station. It is situated some distance away from the course of vessels, and about five miles from the main station, to be next described. All vessels with cholera on board would be sent directly to the Lazaretto station from Port Eads. The sick would then be removed to the hospital and the well located at a safe distance. Ample provision will be made here for all contingencies that may arise in connection with the hospital treatment of the sick or the accommodation of the well. Considering the facts that the fastest ships require not less than two weeks for the trip from European ports to New Orleans, and, further, that few immigrant ships come to this city, we can believe that the Lazaretto would rarely become crowded with persons from infected ships. When all, sick and well, had been removed from the ship, she would then be disinfected from the tug, which would go down for that purpose from the Mississippi River Quarantine-station. The sick having all recovered, the passengers would be taken on board and she would proceed to the station now to be described.

3. The Mississippi River Quarantine-station. At this station, about ninety miles from the city, the final, and a most efficient, disinfection is administered to infected ships. Steam, sulphur dioxid under pressure, and mercuric chlorid solutions are the disinfecting measures employed. Four ships can easily be attended to in one day. The provisions for steam disinfection of textile fabrics are especially effective. The disinfection, as practised here, seems, to all who have personally investigated it, the most satisfactory in operation at any port on this continent.

I say nothing of railroad quarantine, because I believe little can be done in this way, for obvious reasons, when cholera shall once have gained entrance into one of our cities. Strict surveillance of all incoming trains, both passenger and freight, is contemplated when the disease has once come into some other port, but no special preparation is at present making to that end, although facilities are ample for providing, on short notice, adequate inspection.

B. The sanitary safeguards in New Orleans.

It must at the outset be confessed that sanitation is at its lowest ebb in New Orleans. The unpaved and dirty condition of many of our streets, the choked-up condition of many of our gutters, the miserable garbage service, the antiquated and deplorably unsanitary privy-vaults and cesspools, some of them having overflow-pipes into our street gutters, and the general disregard of sanitary precautions until some threatening danger rouses our community from its lethargic condition—all these considerations make the sanitarian heart-sick in the face of an impending invasion. If our people could really be brought to believe, with Goethe, that "In peace, patriotism really consists only in this, that every one sweeps before his own door, minds his own business, also learns his own lesson, that it may be well with him in his own house," then cholera-epidemics would lose for us half their terrors.

Last September, under the stimulus of a few suspected cholera-cases in New York, our people, through the exchanges, urged on by the Board of Health, did make a spasmodic effort to get our streets into a cleanly condition. Many of our gutters were unchoked and streets were cleaned, garbage was more promptly removed, and the people generally were brought to a realization of our sanitary necessities. They were made to believe that cholera revelled in filth and that cleanliness was its abomination. With a long pull, a strong pull, and a pull altogether, *something* was done. New Orleans got into her best plight—for a time. The cholera did not come, and our work seemed to have been in vain. At least, having kept the cholera out, nothing more was needed. Our city quickly relapsed into its former condition, and not only that; for, taking its example of the pendulum, having swung so far in one direction, it has now gone to the extreme in the other. It can be truly said that our city never was a more shining mark for cholera than at present. It is true that under the urging of the Board of Health something seems at last to be contemplated for the improvement of our garbage service; that the New Orleans Sewerage Company, under the able presidency of Dr. Joseph Holt, has matured, with the assistance of the best engineering talent of this country, its plans for an admirable system of sewerage, which

will do away with our death-dealing vaults; but these changes can only be effected with time, and our consideration must be of the present.

The city is under control of a political organization, which is not patriotic but self-loving, and little can be expected of it beyond what the public will demand in time of imminent danger. That cholera will gain entrance into this country through New Orleans, our efficient quarantine in the river negatives, so that we must await its coming most probably through New York, or some other port in closer touch with Europe. When it shall have once more pressed its way in, then will our people awake again from their careless sleep and our city will a second time be cleaned, our garbage service will be made more efficient, our privy-vaults will be emptied, and disinfectants will be freely used about drains and yards.

A source of greater satisfaction is our water-supply, wherein we will yield to no superior. Our water is derived from the following sources:

1. The deep or artesian wells. A very careful analysis of these waters has been made by Prof. A. L. Metz, Chemist of the Louisiana State Board of Health. These analyses, all made in duplicate and once or twice in triplicate, show these waters to contain "albuminoidal material that has partly undergone decomposition, and the results of analyses for free ammonia are high, and the presence of nitrites and phosphates indicate sewage-contamination." We can, with Prof. Metz, declare "the deep well-water of the City of New Orleans unfit for domestic purposes."

2. Drove well-water is likewise to be condemned.

The only waters that deserve our consideration are, then:

3. Rain-water, and

4. Mississippi River water.

Rain-water. This is caught from the roofs of houses and stored in cypress (overground) cisterns. Rain-water may be contaminated from several sources: 1. Location in proximity to privy-vaults. Analysis shows this to be a positive source of contamination. This can only be entirely corrected by the adoption of sewerage, although it can be rendered less dangerous by removing the cistern further off from the privy. 2. The washings of the atmosphere and dirt from roofs. This dirt consists of soot, ammoniacal salts, inorganic and organic material from birds, dead insects, decayed leaves, and the like. Accepting the maximum limit of safety of Dr. Smart as 0.020 parts of albuminoidal ammonia per 100,000, much of our cistern water, according to the analysis in 1891, of Prof. Metz, must be regarded as distinctly unwholesome, some showing as much as 0.080, 0.090, and 0.093 per 100,000. If, however, cisterns are cleaned semi-annually and some one of the numerous cut-offs recommended be used, so as to turn off the first washings of the roof from the cistern, this organic matter would be materially diminished. The danger would be still further lessened by the providing of covers for cisterns. We have city ordinances making such covers obligatory, but we have no ordinance requiring the cleaning of cisterns. While much of our cistern water may be considered unsafe for use, still, as a whole, with the indicated precautions taken, it will compare favorably with the water-supply of other cities. During an epidemic of cholera, moreover, we might regard such water as far less likely to become contaminated than many of the comparatively limited sources of supply of some of our larger cities; for drainage, at least, would not be a source of danger to our *cisterns*.

River water. From the careful analysis made by Mr. Metz, this source of supply must be pronounced far the safest for us in a time of cholera-prevalence, no sample of filtered water showing a quantity of albuminoidal ammonia anywhere near the danger-limit; and this must, as our analyst says, be considered "the purest water attainable in this section under existing circumstances." The water has of late been much improved by the introduction of a filter at the works, which now furnish a fairly (although not uniformly) clear water to the people of the city. The misfortune is that the high water-rates have prevented many from taking advantage of this purest source of supply, and these must perforce fall back upon their overground cistern. With attention to the precautions suggested, we can, however, expect no insurmountable difficulty in dealing, during an epidemic, with the problem of drinking-water contamination.

The milk question might properly merit some consideration here, prone as milk admittedly is to become contaminated with infectious poison, and being of such general necessity. Our milk is delivered, first-hand, from carts directly from dairies to their customers. The Board of Health has made a strong effort to secure a pure milk-supply. In this we have been gratifyingly successful. Only recently the courts have conceded the authority of the Board of Health, under city ordinances, to regulate this matter for the good of the community, and numerous convictions have taught such a salutary lesson that we believe we shall, in the future, have far less trouble in compelling dairymen to furnish unadulterated milk. Starting with a pure article of milk, the precautions to be taken, as to boiling, etc., will insure its safety in time of cholera-epidemic.

A consideration of the foregoing facts would lead one to say that New Orleans is well prepared to prevent the entrance of cholera, but that she is not in such a sanitary condition as would make it easy to cope with the disease after it had once gained a foothold here. Watchful vigilance and an energetic handling of the first cases on the part of our very efficient Board of Health might save us, but the fight with us would be against great odds.

427 PRYTANIA STREET.

CORRESPONDENCE.

COMPLICATIONS OF TONSILLOTOMY.

To the Editor of THE MEDICAL NEWS,

DEAR SIR: Desiring to present an article on the subject of "Complications of Tonsillotomy" at the next annual meeting of the Louisiana State Medical Society, I respectfully solicit answers to the following questions:

1. Number of cases of hypertrophy of faucial tonsils operated upon; 2. Complications occurring during these operations, stating nature of complications and number of cases affected; 3. Method of operating in the cases in which these complications developed. In publishing

these cases, I shall, if desired, omit the name of the physician who reported them.

I shall mail a reprint of the article to those physicians who send me a report of their cases.

Very respectfully,

W. SCHEPPEGRELL, M.D.

EYE, EAR, NOSE, AND THROAT HOSPITAL, NEW ORLEANS, LA

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 702.)

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE.

FIRST DAY—JUNE 6TH.

THE Chairman, DR. C. K. MILLS, of Philadelphia, delivered an address entitled "The Influence of Special Societies and Section Work on the Development of Neurology in America." He suggested the advisability of limiting the time for discussion to five minutes, except in the case of the reader of the paper, who should close the discussion. He referred to the excellent work done by the Philadelphia Neurological Society, citing this as an example of the advantage of such societies. The American Medical Association can best advance by allotting special work to the sections. The appointment of committees to do special work has been of great value. Too many isolated cases are, however, reported, and papers have not always been well prepared. A great advantage of small societies is that they secure definiteness of aims.

DR. HENRY H. DONALDSON, of Chicago, read a paper on "The Weight of the Brain." In a large number of examinations it has been shown that the weight of the brain is greater in the male than in the female; that it is not unusual in insanity except in cases of wasting disease; and that the brain wastes slightly in old age. These observations, however, are taken from the unfortunate classes. It has also been shown that the brain increases rapidly in size from birth up to seven or eight years, and thereafter more slowly up to fifteen or twenty. Then for the next few years there usually occurs a slight falling off in weight, which, in turn, gives place to an increase up to thirty-five or forty, the weight remaining constant for ten or fifteen years, and then decreasing. These data are obtained from an examination of dead, and not of living subjects; so that the curve representing the course of brain-growth cannot be taken as indicative of the growth of the individual brain. A study of the favored classes might yield different results. Brain-growth is especially rapid during the first year. Cells and their prolongations are the structural elements of the nervous system. All nerve-cells are formed before birth, and the brain increases after birth by the enlargement of the elements already present, and not by the formation of new elements. The granules in the cortex and other localities are undeveloped nerve-cells, which, by growth, are transformed into the characteristic ganglion-cells. The conditions of growth must be delicate; as two individuals, starting with nerve-cells of the same weight at birth, arrive at maturity with very different brain-weight. The size and number of the elements and relative abundance of the medullary substance must be the next step in the interpretation. Race, age, sex, stature, bodily weight, mental condition, individual development, and cause of death are all factors to be considered.

DR. C. H. HUGHES, of St. Louis, read a paper entitled "Dyspepsia as a Nervous Disease, or Indigestion in Its Nervous Aspect and Relations." He pointed out that dyspepsia, as it is generally encountered, is more frequently a secondary than a primary disease; secondary to degenerative or exhaustive changes in the central nervous system. It is a well-known fact that the lowest animals do not have dyspepsia; that the elements of dyspepsia are first observed in trained animals, in consequence of habits of life and environment that bring about the neurotrophic condition from which dyspepsia arises as a secondary manifestation.

DR. J. MADISON TAYLOR, of Philadelphia, read a paper entitled "Abstract of Notes on the Treatment of Exophthalmic Goiter." He reviewed the relationship of exophthalmic goiter to other vascular disturbances associated with enlargement of the thyroid, as myxedema, cretinism, and akromegalia. Current knowledge of the physiology of the thyroid gland does not warrant the hope that much is to be expected from the use of preparations of the gland in the treatment of exophthalmic goiter. A number of cases long under observation were analyzed, and the following summary of treatment was presented:

Regulated rest, with carefully graduated activity, as time and circumstances warrant; systematic measures directed to the upbuilding of the general health; careful attention to nutrition, recognizing the trophic element in the disorder.

Careful attention to the vascular condition, which is most noticeably at fault and which demands the most constant treatment. This includes various measures regulating vasomotor activity, as well as loss of nervous force through the easily disturbed nervous balance. The skin is to be acted upon from the surface by means of certain remedies that seem to exert a control over the constant tendency to vasomotor neuroses, both superficial and deep.

The searching out and remedying of constitutional defects; the elimination of accidental poisons, either diathetic or temporary, or of toxins from whatever cause.

The regulation of the nervous or emotional balance, by careful attention to the habits and environment of the individual; carefully regulating, so far as is possible, emotional strains; making much of moral teachings with those whose will-power and mental equilibrium are gravely at fault constitutionally and as the result of months or years of suffering and susceptibility.

A careful consideration of such measures as are regarded as specifics, as electricity.

DR. DANIEL R. BROWER, of Chicago, read a paper entitled "Suggestions on the Treatment of Locomotor Ataxia." He said that some cases of posterior spinal sclerosis may be cured and some may have the rate of progression considerably impeded. If the disease is recognized in the pre-ataxic stage, rest for three months should be the foundation of the treatment. Potassium

iodid and fluid extract of ergot in full doses, and galvanism are of value. Hypodermatic injections of morphine are valuable to relieve paroxysms of pain. The digestive organs should be carefully guarded, and alcoholic stimulants and sexual intercourse prohibited. In the second stage or the stage of incoördination, when the disease usually progresses rapidly, ergot will sometimes prevent the progression. Suspension is of service, continued as long as possible, from five to fifteen minutes. In this stage the injection of chlorid of gold and sodium is advisable, at the same time employing zinc phosphid and sodium arseniate, as well as galvanism; no benefit may be expected from the internal administration of any preparation of silver. Cold bathing is of value; hot baths are contra-indicated. The pains of the second stage are met by morphine; sometimes phenacetin, antipyrin, or the like answers the purpose better. Patients can be taught to regain some degree of coördination by the practice of standing with the feet close together and the eyes closed. If the patient stands in the bath-tub and has cold water poured on his spine, coördinating control will be more speedily regained. The bladder will need attention to avoid cystitis. Hypodermatic injections of morphine may be used for the relief of gastric crises. In the third stage tonics are indicated; galvanism to the spine and faradism to the surface; injections of cerebrin and other animal products have thus far not yielded favorable results.

DR. T. D. CROTHERS, of Hartford, recommended Turkish baths in treatment, and said sometimes an apparent cure is thus effected.

DR. C. H. HUGHES, of St. Louis, suggested that in cases of apparent recovery the correct diagnosis should have been multiple neuritis.

DR. L. HARRISON METTLER, of Chicago, read a paper entitled "Hemiparaplegia; Report of a Case Completely Recovered after One Year's Duration."

The conclusion was reached that hemiparaplegia may result from a lesion in the lower part of the cord, anesthesia and paralysis appearing upon the same side of the body.

DR. METTLER also read a paper on "Aural Vertigo—Ménière's Disease." He said that medical literature abounds in cases wherein a sudden attack of vertigo, associated with loss of hearing, was diagnosticated as hemorrhage into the labyrinth, without further investigation into the corectness of the inference; but vertigo as a mental phenomenon seems to be of far too complicated a character to presuppose so simple an origin. If the views of Spitzka and Starr are correct in regard to the sensory paths in the medulla, they bear strongly in favor of the sensori-motor theory of vertigo. Every indication points to the fact that the center of equilibration must be looked for, not in one particular part of the brain, but in the harmonious action of the various sensory and motor centers one upon the other. Ménière himself seems to have believed that only the semicircular canals are affected in true Ménière's disease. He, however, ascribed cerebral symptoms to a lesion of the canals on the strength of a single observation, and even that observation was not conclusive as to that particular case. Much confusion has arisen in regard to aural vertigo. Disease of any part of the internal ear, and even of the middle ear, has been termed Ménière's, though Ménière himself restricts the designation to disease of the semicircular canals. Gowers strongly supports the labyrinthine origin of vertigo, but his proofs are inadequate. Though the implication of the semicircular canals in aural vertigo be admitted, it still remains a difficult matter to explain upon his hypothesis the vertiginous symptoms and loss of hearing in all cases. The semicircular canals in the shark have been removed without causing any disturbance of movement. There is no regular correspondence between the degree of deafness and the intensity of the vertigo with total loss of hearing in Ménière's disease. All known methods of diagnosis prove that the nerve itself and not merely the internal ear is affected. Physiologic experiment shows that simple pressure does not cause total loss of hearing, when no injury is done to the cochlea, and no case has ever been reported in which the cochlea was primarily affected, with consequent involvement of the canals and vertigo. Hence it is concluded that in Ménière's disease the lesion must concern the whole labyrinth or lie entirely outside of it. There is little doubt about the central nature of the disease in many of its aspects. The sense of irritation may sometimes be in the semicircular canals, just as sometimes it may be in the eye or in the stomach, but the immediate cause of the vertigo cannot be there, and in view of the few physiologic and pathologic data at hand, there is no justification in assigning all cases of vertigo to an unknown and undemonstrable lesion of the internal ear.

DR. WILLIAM FULLER, of Grand Rapids, Mich., read a paper entitled "A Method of Localizing Points in the Hemispherical Ganglia." He presented a model of the brain made by hardening with great care, separating the lateral halves and slicing each half into segments, three-sixteenths of an inch thick, perpendicular to the long axis of the brain.

DR. FULLER also presented a communication entitled "An Examination into the Question of Priority in Craniectomy for Idiocy." He stated that in 1887 he performed craniectomy for the relief of idiocy, an account of which was published in the *Canadian Medical and Surgical Journal*, in 1887. The operation was ridiculed in both America and Europe at the time, but has since been claimed as originating with European surgeons.

SECOND DAY—JUNE 7TH.

DR. THEODORE DILLER and DR. J. J. BUCHANAN, of Pittsburg, Pa., presented a paper entitled "A Case of Subcortical Cyst of the Lower Part of the Ascending Parietal Convolution; Operation; Recovery." Nearly all of the important symptoms of intra-cranial growth were present: Headache, vomiting, vertigo, convulsions, and paresis. From the history of the case it was evident that a lesion was located in the left Rolandic region, involving principally the hand-center. The absence of sensory symptoms seemed to indicate that the lesion was situated anteriorly to the Rolandic fissure, and from the fact that paresis preceded convulsions, the lesion seemed probably a subcortical one. The relative method of Thane was employed to locate the fissure. A thin sheet of aluminum was employed, cut in the form of a segment of a circle, having an angle of 67° and a radius of three and three-eighths inches, and moulded to fit the average skull, when its straight sides

are applied respectively to the median line and to the part of the scalp corresponding to the fissure of Rolando. While the result of the operation fell considerably short of an entire cure and was, in a measure, disappointing, yet it was followed by distinct and unmistakable benefit to the patient. It is too early to tell what the ultimate result will be. The case offered strong evidence in support of the view that the ascending frontal convolution is exclusively related to motor functions. The cortical representations of the forearm and hand are located in the ascending frontal convolution; the cortical subdivisions of the arm-area are related to each other as follows in the ascending convolution: that for the shoulder is highest, with the elbow, wrist, fingers, below in the order named; the center for the thumb is located in the ascending parietal convolution, a little below that for the fingers. The case confirms the theory that a subcortical lesion is likely to produce paresis before convulsions, and exemplifies the general principles of localization as enunciated by Horsley, Sequin, Mills, and others.

DR. C. B. BURR, of Pontiac, Mich., read a paper on "Surgery in the Insane." He presented a collection of cases illustrating phases of surgery that come under the eye of the hospital alienist, including gynecologic operations; also two cases of melancholia, in each of which trephining had been performed, without relief. Cases illustrating the curative effect of operations, *per se*, are well known to alienists and which surgeons are of late beginning to recognize. Hernia and perityphlitis are relatively common in the insane, but often escape notice.

DR. H. N. MOYER held that the element of consent is extremely important, especially when surgery of a radical character is practised, as, for instance, the removal of tubes and ovaries when there is no apparent local disease, for the effect upon the general nervous system. He said that shock is comparatively slight in operations upon insane persons, notwithstanding their general low nutrition.

DR. JAMES G. KIERNAN pointed out that the position of a superintendent of an insane asylum is a *quasi* legal one. He is the guardian of the patient, and under such circumstances has the right to give consent for the patient for an operation. Especially is this true in case of emergency. The removal of healthy tubes and ovaries is not likely to be followed by permanent improvement. The counter-irritation may produce a temporary improvement, but such operations are not justifiable.

DR. G. F. LYDSTON, of Chicago, Ill., read a paper on the "Therapeutic Use of Static Electricity." He contended that the use of static electricity in medicine has been too closely restricted to the more advanced neurologists. He has found it a valuable agent, especially in the treatment of neurasthenia, particulary in the forms associated with brain-fatigue and sexual hypochondriasis. The application of the static current to the spine has seemed to have a marked stimulating effect upon the genito-spinal center. In no case have any injurious effects been observed, but in some sensitive and neurotic patients the current should be used with a certain degree of circumspection.

DR. L. C. GRAY, of New York, said that too much had been expected in the first place from the use of static electricity. The results had consequently proved disappointing. There was a revulsion of feeling against the agent and it had been largely discontinued, but it seems to be coming into use again. The improved machines of the present day are a great advantage; the results have been surprising in certain cases; especially has it proven useful in cases of muscular atrophy.

DR. DANIEL R. BROWER, of Chicago, called attention to the usefulness of the static current in cases of chorea, and described his method of application, which consists in placing the patient on an insulated stool and applying the current for from ten to fifteen minutes.

DR. HAROLD N. MOYER, of Chicago, presented a paper on "Sodium Arseniate in the Neuroses." He said that arsenic holds a prominent place in the treatment of nervous disorders. The objection to the use of Fowler's solution of potassium arsenite hypodermatically is that it is exceedingly irritating. Arsenic injected beneath the skin has a far less toxic effect than when administered by the mouth. Potassium arseniate possesses the advantage of giving rise to no local irritation, so that much larger doses can be employed. Dr. Moyer has given at a single dose a quantity of sodium arseniate equivalent to from forty to sixty minims of Fowler's solution. It is a common practice to give the equivalent of thirty minims of Fowler's solution as the initial injection. In order to prepare accurate solutions for hypodermatic use, it is necessary to subject the salt to a temperature of about 300°, which drives off the water of crystallization.

DR. M. V. BALL, of Philadelphia, read a paper on "Insanity Among Convicts." He said that when communities recognize that "every society deserves the criminals it has," they will endeavor to correct the evils that in large part cause crime, and will treat malefactors not with a spirit of vengeance, not with a visitation of justice, not as sinners, but merely as obstructionists whom society must place under restraint or remove to a place where they can be of service instead of hindrance; then only will the penal question reach solution. Present modes of justice are puerile. What would be thought of the suggestion that a chronic maniac should be sent to an insane asylum for a year and then be released unconditionally; then, after he had killed someone, that he should again be sentenced for a definite term of one or more years? The danger to society alone should be considered, and the professional criminal placed in durance vile until cured (if that result is possible), or permanently if incurable, and wholly as a protection to society and irrespective of his sanity or insanity, his moral responsibility or irresponsibility.

DR. LANDON CARTER GRAY, of New York, read a paper entitled "What Should Constitute Responsibility in the Medical Sense, in Insanity?" He pointed out that great injustice is likely to be done to the insane by basing the view of their insanity upon the proposition that if a man is able to understand the nature, quality, and consequences of an act, he is legally responsible for such an act. The question of legal responsibility should be determined, not by laws, but by facts. Medical science has demonstrated that a diseased condition of the brain that gives rise to mental aberration permits of no half-way ground in judging of sanity. Periods of remission cannot reasonably be called "lucid intervals,"

as is often done. After classifying the types of insanity that have been marked out up to the present time, such as the moods, the presence of hallucinations and of delusions, the coexistence of the neuroses and of organic brain-disease, traumatism from excessive use of narcotics, and the mental disturbances occurring from derangement of the organism induced by disease of non-nervous viscera, Dr. Gray called attention to the fact that in paranoia, mania, and melancholia the reasoning powers and the memory are usually intact, yet the patient has undeniable hallucinations and delusions, under the influence of which he commits acts for which he should not be held legally responsible. He cited the case of the paranoiac Dougherty, who imagined himself the beloved of Mary Anderson, and that the world was conspiring to keep him from her, and, in pursuance of this delusion, murdered Dr. Lloyd, of the Flatbush Insane Asylum, and was planning to kill about a dozen public officers whom he believed to be in the conspiracy. Yet he declared himself sane and asserted that he knew the nature, quality, and consequence of his act. He was properly pronounced insane, because his mania was so palpable, although some doubt prevailed in the public mind as to his insanity. The only safe test of the legal and testamentary responsibility of a man lies in an answer to the simple question: Is he insane? If he is, he is not legally responsible, and this question can only be properly decided by competent physicians, not by fine-spun theories of lawyers. Common sense must be applied to such cases rather than metaphysical definitions of mental aberration.

Dr. Edward B. Angell, of Rochester, N. Y., read a paper entitled "Double Lesion of the Brain: Cerebral Cyst and Cerebellar Tumor." The post-mortem examination demonstrated an increase in the development of the brain on the right side, which had to take up the functions of the disorganized left side.

Dr. James G. Kiernan, of Chicago, referred to a case of right hemiplegia with aphasia in an adult in which, by education, speech was regained, but was lost after a second attack. The autopsy showed that the left speech-center had been destroyed in the first attack by hemorrhage, and the second attack destroyed the right.

Dr. J. N. Hall, of Denver, Col., read a paper entitled "Gunnery Developments and the Medical Jurist." He said that newly introduced explosives are rapidly replacing black powder. He described the two most commonly used of these products—the American wood-powder and the Schultze powder. The staining from wood-powder is much less distinct than that from black powder, and the staining from the Schultze powder is even less marked than that from wood-powder. Neither of the two new powders ignites cloth or blotting-paper at so great a distance as does the black powder.

Dr. Harold N. Moyer called attention to the fact that the length of the barrel of the weapon should always be considered in making up tables, and stated that there is always leakage of gases in revolvers. Another interesting point is not only the kind of powder, but also the amount of fulminate in the fixed ammunition, as well as the manner in which it is put into the cartridge, whether fine-grained or practically in a solid mass.

Dr. Frank R. Fry, of St. Louis, read a paper entitled "Sensory Symptoms of Three Syphilitic Cord Cases."

Third Day—June 8th.

Dr. W. J. Herdman, of Ann Arbor, Mich., read a paper entitled "Lesion of the Right Temporo-sphenoidal Lobe." The case reported was at first diagnosticated as one of embolism of the left anterior cerebral artery. The autopsy revealed an extensive hemorrhage anterior to and at the lower extremity of the right lateral cornu. Softening followed, involving the hippocampus major at its lower extremity and the anterior extremities of the superior, middle, and inferior temporal convolutions. The assumption was considered justified that as far as any symptoms observed in this case can be justly referred to the lesion in the right temporal lobe, they tend to show that its function is of the same nature for the left side of the body that Ferrier has found the left temporal lobe to be for the right—that is, a cortical center for hearing and taste.

Dr. Charles K. Mills referred to several similar cases, which appeared to demonstrate that the left upper temporal region is most particularly developed for word-sound, and the right has a minor degree of development of the same function and takes on the function of the left in part, but not entirely, in case of the destruction of the former.

Dr. Charles K. Mills and Dr. G. E. de Schweinitz, of Philadelphia, presented a paper entitled "Hemianopsia and Certain Symptom-Groups in Sub-cortical Lesions." The first case reported presented right lateral hemianopsia, absence of Wernicke's symptom, dyslexia, temporary right hemiparesis, and Jacksonian epilepsy. In the second case there was right lateral hemianopsia, absence of Wernicke's symptom, dyslexia, right hemiparesis, partial right hemianesthesia, partial word-deafness and word-blindness. In the third case there were right lateral hemianopsia, absence of Wernicke's symptom, temporary aphasia, dyslexia, right hemiparesis of spastic type, probably word-blindness. Case four presented left lateral hemianopsia, partial left hemiparaplegia and hemianesthesia, temporary aphasia, epilepsy, Wernicke's symptom. Case five presented lateral hemianopsia, absence of Wernicke's symptom, temporary right hemiplegia, persistent hemianesthesia. Case six presented left lateral hemianopsia, left hemiplegia. Case seven presented right hemianopsia, right hemianesthesia. Case eight presented right lateral hemianopsia, doubtful absence of Wernicke's symptom, slight right hemiparesis. Case nine presented left lateral hemianopsia, absence of Wernicke's symptom at first, paresis of both legs, later right spastic crural monoparesis. Of two cases probably of cortical origin, one presented typical left lateral hemianopsia; and the second, right hemianopsia, with absence of Wernicke's symptom.

Another case was reported of right lateral hemianopsia, followed a year later by left lateral hemianopsia, with absence of Wernicke's symptom, retained macular vision, changes in the color-sense, loss of the sense of location.

A case was also reported that seemed to teach that there may be either functional or organic disturbance of the word-symbol center of the same character as that which produces hemianopsia when the half-center for general vision is destroyed on one side of the brain.

Dr. Thomas D. Crothers, of Hartford, Conn., read a paper on "American Inebriate Asylums."

He said that managers of asylums who teach dogmatically the nature of inebriety and its only true remedies are not far along in scientific work, and asylums that claim large percentages of cures from certain means and remedies are not worthy of confidence. Inebriety is the most complex neurosis of modern research. The gold-cure specifics, so called, are followed by an increased number of insane among those who have used the treatment. This was to have been expected, as the more powerful the narcotic used to stop the drink-symptom the more certain are insanity and profound degenerations of the brain-centers to follow. The asylum care and treatment of inebriates began first in this country, and has grown and extended to all civilized nations of the earth. American asylums have developed the disease-theory and the practical character of physical treatment in institutions beyond that of any others in this field. Asylums in the United States represent nearly all stages of development and early growth, from infancy and childhood, with its feeble conceptions and infantile efforts, to the boastful assumption and over-confidence of youth, on to the dawning truth of early manhood, when reason and judgment begin to reign. A few of these asylums discern similar great truths, which may be stated with confidence as ideals toward which there is a rapid movement. Inebriate asylums must take the place of jails and station-houses. Inebriate asylums should receive the incurable inebriates and make them self-supporting and build them up physically and mentally. Inebriate hospitals should receive the recent cases and place them in the highest conditions of enforced health and vigor, and thus restore a large number to health and sobriety. Inebriate hospitals should be self-supporting when once established. They should be managed on scientific business principles, like military training-schools. Inebriate hospitals should be built with money raised by taxes on the sale of spirits, on the principle that every business should be obliged to provide for the accidents that grow out of it. The inebriate hospitals of to-day are only in the infancy of their work, contending with great opposition and prejudice, misunderstood, condemned, and working against innumerable obstacles. There is an intense personality in inebriate hospitals. Inebriate hospitals and their work are the great new lands which only a few settlers have reached. They are calling to us to come and occupy and thus help the race on in the great march from the lower to the higher.

Dr. Clark Gapen, of Omaha, Neb., read a paper entitled "Lawyer's Criticisms of Expert Testimony."

He said that as at present conducted the trial of a cause involving a medico-legal question is a mere farce, as compared with the trial of a cause involving a pure question of law. The medical expert should be selected by the court as an advisory, and wholly with reference to his special knowledge of the question involved. Medical jurisprudence should be properly taught in the colleges. The so-called chair of medical jurisprudence usually teaches nothing but the mummery of some text-book of ancient times. The proper way is to give a forecast of the legal experience that the student will encounter in the future. He should be taught to be frank, truthful, direct, plain, and non-technical. Students go forth unequipped in this regard. Another cause of the disrespect of medical expert evidence is the common custom of participating in the trial both as counsel and as witness. The court might properly take testimony as to the qualifications of the expert. A good way would be to have lists handed in by each side and let the court choose from the lists. The expert should avoid invading the province of the jury and giving an opinion in the case. The proper course is to put a hypothetic question for the expert to answer.

The following papers were also read:

Dr. Frank P. Norbury, of Jacksonville, Ill., read a paper on "Insanity in the Aged."

Dr. Harriet C. B. Alexander, of Chicago, read a paper on "Acute Mental Symptoms in Children."

The following officers were elected for the ensuing year:

Chairman—James G. Kiernan, of Chicago.

Vice-Chairman—Landon Carter Gray, of New York.

Secretary—F. P. Norbury, of Jacksonville, Ill.

NEWS ITEMS.

Dr. E. O. Shakespeare has assumed editorial charge of the Department of Hygiene and Preventive Medicine of the *Dietetic and Hygienic Gazette*.

A. Kolisko has been appointed Professor of Pathologic Anatomy in the University of Vienna, in succession to Kundrat, recently deceased.

Dr. James J. Levick, a well-known physician of Philadelphia, died June 25th, of cardiac disease, at the age of sixty-eight years. He graduated from the University of Pennsylvania in 1847, and became a resident physician in the Pennsylvania Hospital, and subsequently one of the attending physicians. At a later date Dr. Levick was elected to the staff of Wills Eye Hospital. He was also connected with the Magdalene Asylum. In 1884 he received the degree of Master of Arts from Haverford College. Among his contributions to medical literature were a paper on heart-disease and one on spotted fever.

Books and Pamphlets Received.

Materia Medica and Therapeutics. By John V. Shoemaker, A.M., M.D. Second edition. Two volumes. Philadelphia and London: The F. A. Davis Co., Publishers, 1893.

An Inquiry into the Causes of the Mortality of Diphtheria, and Some Suggestions with Reference to the Treatment of Diphtheria. By Alonzo Bryan, M.D. Reprinted from the Physician and Surgeon, 1893.

Pocket Dose-book. Compiled by John Edwin Rhodes, A.M., M.D. Chicago, Ill.: Sharp & Smith, 1893.

Report on 100 Cases of Ether-anesthesia by Clover's Inhaler. By G. Gordon Campbell, B.Sc., M.D. Reprinted from the Montreal Medical Journal, 1893.

Reports of Friends' Asylum for the Insane, 1893. Philadelphia: George H. Buchanan & Co., 1893.

The Treatment of the Nasal Catarrhs. By William T. Cathell, M.D. Reprinted from the Maryland Medical Journal, 1890.

A Study of Two Cases of Paroxysmal Sneezing, with Treatment. By William T. Cathell, M.D. Reprinted from the Transactions of the Ninety-fifth Annual Session of the Medical and Chirurgical Faculty of Maryland.

The Recrudescence of Leprosy and its Causation. By William Tebb. London: Swan, Sonnenschein & Co., 1893.

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ORIGINAL ARTICLES.

HEART-DISEASE OR KIDNEY-DISEASE?[1]

BY JAMES TYSON, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA, ETC.

I HAVE myself so often been mistaken in the first conception formed of the relation between a combination of symptoms for which heart or kidney may be responsible, and have so frequently had occasion to share the difficulty with others, that I have been forced to give the matter some thought; and it seemed to me that so practical and important a subject might also be interesting to the members of this Society.

The difficulties met under these circumstances will, I think, be better appreciated by the brief story of four or five illustrative cases:

CASE I.—O. E., a shop-girl, aged fourteen, was admitted to the Hospital of the University of Pennsylvania, October 31, 1892.

Her mother is said to have had heart-disease, but the family history is otherwise negative. The patient herself had measles in childhood, but, with this exception, reported no illness until that for which she sought admission. This set in apparently only three weeks previously, when she noted that her legs were swollen. Shortly after this she became short of breath. She continued, however, to perform the duties of her position up to the time of her admission to the hospital.

On admission her appearance was most striking. A lustrous pallor pervaded her entire body—in fact, she presented the characteristic waxy hue of chronic renal disease. Her feet and legs were much swollen, as were also the right hand and face. To a less degree she was everywhere edematous, though more so on the right side, on which she mostly lay. The urine was dark-hued, had a specific gravity of 1030, was loaded with albumin, and contained numerous granular casts.

My colleagues, as well as myself, all said: a "typical case of renal disease." The urine-examination seemed scarcely necessary. The diagnosis could be made at a glance. As a matter of course, however, her heart was also examined. The apex-beat, in the third interspace, was forcible and rapid, from 108 to 120, while the respirations numbered from 40 to 43 in the minute. On palpation, a cardiac thrill, systolic in time, could, in addition, be appreciated.

Percussion determined the upper border of cardiac dulness to the left of the sternum, at the superior edge of the third costal cartilage; the right border one inch to the right of the right margin of the sternum. There was, therefore, enlargement of the right side of the heart, as well as of the left. There were the signs of pleuritic effusion on both sides. Auscultation recognized a double murmur, most intense at the apex, with the systolic portion conducted into the axilla.

Here was then a case of mitral disease—regurgitation, and probably stenosis, with right-sided dilatation; but the intense waxy appearance and the pronounced albuminuria led us to believe that there was also positive renal disease, probably subacute parenchymatous nephritis.

The girl was ordered absolute rest in bed, five minims of tincture of digitalis three times a day, and caffein citrate, three grains every four hours. Copious diuresis set in, and at the end of five days the dropsy was almost totally gone. The scanty urine had increased until it reached 62 ounces, while the albumin and the casts had entirely disappeared. The change was almost incredible. I had never seen such a striking one in so short a time. The mitral murmur continued, showing that the heart-disease was the permanent one, and the idea, almost irresistible at first, that there was some special form of renal disease, independent of the passive congestion due to the cardiac disease, was dissipated.

She remained in the hospital until December 24th. Once there was a return of the albumin and a few granular casts, concurrent with an attack of bronchitis, but these again disappeared, and she was discharged seemingly quite well. The diastolic part of the double mitral murmur finally also disappeared, and the heart had been restored to its original dimensions, but the mitral systolic murmur continued, and is likely to be permanent.

CASE II.—F. R. P., a bank-officer, aged forty-two, was seen in consultation with Dr. S. R. Crothers, of Chester, Pennsylvania, on November 19th, 1892. With the exception of typhoid fever, ten years before, and an attack of influenza in December, 1891, he had never been seriously ill. About one year previously to his visit to me he first began to have attacks of palpitation of the heart and shortness of breath, with headache. He was treated for "functional trouble," and improved sufficiently to return to work. In this, however, he overtaxed himself, and at the end of about two months he was again compelled to give up. Although he spent much of the summer at the seaside, there was not improvement sufficient to permit his return to business. All of this time his symptoms pointed to heart-disease, and his own belief and that of his family were that this was his principal, if not his sole illness.

[1] A paper read before the Medical Society of the State of Pennsylvania, at Williamsport, Pa., May 17, 1893.

At the date of his visit to me there were aggravated dyspnea and cough, but the headache, from which he had before suffered so much, had disappeared. There was also nausea, especially in the morning, but at times also in the day, associated occasionally with diarrhea. His complexion was intensely sallow—almost cachectic.

On inquiry, I found that his feet were a little swollen at night, but that this swelling disappeared each morning. Examination of his heart disclosed enormous hypertrophy of the left ventricle, the apex being lowered and displaced to the left. The aortic second sound was accentuated, but there was *no murmur*. The action of the heart was tumultuous, its rate frequent, and its rhythm irregular.

The urine throughout had been copious, light-hued, and low in specific gravity, until a short time before his visit, when it had become scanty and high-colored; but at the time of his visit, through the action of diluents and diuretics, it was increased to 64 ounces in the twenty-four hours. A portion of this examined by me had a specific gravity of 1012, and contained only one-twentieth per cent. of its bulk of albumin, and a small number of hyaline casts.

In this case the prominent symptoms were cardiac, in contrast with Case I, in which the most striking symptoms pointed to the kidneys as their source, and in fact were at the time caused by the renal complication. Yet the former was primarily a case of renal disease, and the latter one of heart-disease.

This is a state of affairs that supervenes on an interstitial nephritis, a gradual hypertrophy of the left ventricle, the rationale of which is not perfectly agreed upon, but which I am inclined to look upon as a compensatory hypertrophy, maintaining the individual in tolerably good health until compensation begins to fail, when the symptoms of cardiac distress described set in, and increase until death takes place, as in this case, suddenly, from simple cardiac failure, or, as is perhaps more frequent, from uremia.

In this instance, therefore, a case of primary renal disease was overshadowed by cardiac symptoms in so marked a degree as to cause the latter to be overlooked.

CASE III.—A. G. B., a retired merchant, aged sixty-two, consulted me first on the 16th of April, 1892. He had a clear family history of gout, his father having been gouty years before his death, and dying suddenly. The patient himself had been subject to attacks of gout for a number of years, and had tufaceous deposits in his knuckles. He had an attack of influenza in the early part of 1890, and another in May, 1891; but during the year previous to his consulting me he had been more than usually exempt from gout.

Albuminuria was discovered by Dr. Pepper in May, 1891. Following this the patient spent the summer in Europe. While in Europe the albumin disappeared, and continued absent until a few days before he consulted me, when its presence was discovered by his son, a medical man. He also noted at this time a little dyspnea on exertion, but with these exceptions felt as well as usual. His last evident attack of gout was on board ship, in the autumn, while returning from Europe.

At the time of his visit to me, in April, 1892, I examined his urine, morning and evening samples. Each contained one-tenth of its bulk of albumin, but I found no casts in either sample. The morning urine had a specific gravity of 1016; the evening, of 1014. I concluded promptly that I had to do with a case of chronic interstitial nephritis of gouty origin.

In June, following his visit to me, the patient again went to Europe, and returned late in September, 1892. He had a couple of slight attacks of gout during his absence, and a little oppression in breathing on shipboard, so that he had to sit up in his berth. During the month of June there was some irregularity of action of his heart, which he ascribed to flatulence. With these exceptions, he considered his health even better while in Europe, in the summer of 1892, than in the previous summer.

On November 21, 1892, he again consulted me. He complained of flatulence, and of what he termed wind pressing on his heart. This prevented him from lying down in comfort. He also thought that it caused cough. On the day before his visit he first noted a little swelling of his feet.

I now examined his urine again. It was dark-hued, contained one-tenth of its bulk of albumin, and this time I found a few hyaline casts. There was also a little swelling about his ankles, and auscultation disclosed an evident mitral systolic murmur. I prescribed rest at home (he had been attending to some business), salicylic acid, pepsin, and aromatic powder for the flatulence; also hot water before meals; and for the dropsy, a pill containing digitalis, quinine, squill, and nux vomica. In a few days the edema had disappeared, and the dyspnea was partially relieved. A few days later both symptoms returned, and although again relieved for a time, they proved ultimately intractable. There was dulness to the right of the sternum. Evidently the right ventricle was yielding. The urine became more scanty, the albumin increased, as also did the casts, and the patient died suddenly December 20th.

CASE IV.—John W., a colored laborer, fifty-two years old, was admitted to the Hospital of the University of Pennsylvania, April 18, 1893. His family history was negative. He had had a bad attack of typhoid fever thirty-five years ago. Eight years ago, while working in a brick-yard, he suddenly fell, and was unconscious for about four hours. With returning consciousness came unimpaired muscular power; but four years later he awoke one morning completely paralyzed on his left side, without any evidence of anything else happening in the night. At the end of three days, however, he began to regain power in the arm and leg of the affected side, and in three months was able to move around with the aid of a cane. His condition in this respect has

been improving steadily, but two years ago he noted that he was short of breath, and last winter this symptom grew worse, while edema of the legs was superadded. These symptoms finally became so aggravated that he entered the Philadelphia Hospital, whence, after six weeks, he was discharged, greatly relieved.

Two weeks previously to admission to the University Hospital he again became ill, the chief symptoms being enormous swelling of the legs, orthopnea, and a dry, hacking cough, very troublesome at night. On admission we noted also irregularity of the heart, hypertrophy of the left ventricle, and an easily recognizable mitral systolic murmur. There was also the remnant of the left-sided paralysis, and on this side the edema was much greater than on the right side. There were the signs of effusion in the left pleural sac, and the percussion-boundary of the liver indicated some enlargement.

The urine was albuminous, containing one-seventh of its bulk of albumin, but no casts were found.

The diagnosis here made was mitral regurgitation, a diagnosis that was thought to be sustained by the enlargement of the liver. Treatment proved ineffectual, and the man died less than three weeks after admission.

At the necropsy there was found enormous eccentric hypertrophy of the left ventricle, with dilatation of the right ventricle, both ventricles, and especially the right, being distended with blood. The heart weighed 1000 grams, with the blood in it, 750 when emptied, the normal weight being about 337 grams. The *mitral leaflets were a little thickened, but essentially normal.* The aortic cusps were normal, as were also the valves of the right side of the heart.

There was a large effusion in the left pleural cavity, as recognized before death, and a patch of congestion in the lower part of the left lung. The liver weighed 1285 grams, and was *not*, therefore, enlarged, the normal weight being from 1550 to 1860 grams.

Both kidneys were enlarged, the right weighing 210 grams, the left 220 grams, the normal weight being from 130 to 150 grams. The cortices especially were widened, and the seat of chronic parenchymatous nephritis, which, in the light of the autopsy, I regard as the cause of the hypertrophy of the left ventricle.

I have selected, from among many cases, these four of combined cardiac and renal disease, in all of which there was, at the beginning, and in some throughout life, more or less erroneous conception of the exact state of affairs. The first case, that of the shop-girl, aged fourteen, was supposed to be a case of chronic parenchymatous nephritis, while further study showed it to be one of primary valvular disease of the heart, with secondary passive congestion of the kidney.

The second case was one of chronic interstitial nephritis, with hypertrophy of the left ventricle, in which all of the symptoms pointed to primary heart-disease, but the true nature of which was easily revealed upon closer study.

The third case was a more complex one than either of the others. An ancestry of gout; a personal history of much gout; an albuminuria, at first small; absence at first of casts, and then sparse casts, all pointed to gouty kidney, a supposition by no means weakened by the oppression and dyspnea, symptoms that almost always supervene when the hypertrophied left ventricle of chronically contracted kidney begins to fail. On the other hand, the evident mitral murmur, the moderate degree of hypertrophy of the left ventricle, the stretched right ventricle, the irregular heart, the gastric catarrh, and the dropsy, pointed to a condition of mitral regurgitation, which, I cannot but think, was also present, a view in which I was also sustained by Professor Da Costa, who saw the case with me. Yet the problem was a difficult one, and the question, "heart or kidney?" was carefully debated. It seemed to us that in this case doubtless both organs were affected independently of that interdependence that always exists between these two important organs. That is, there were interstitial nephritis and endocarditis, both the result of the same cause—gout—and the coöperation of these two conditions accounted for the intractableness of the case. Unfortunately, in this case there was no autopsy to settle the question, and it must always remain a matter of probabilities.

That such a state of affairs does occur is shown by the following interesting case:

Case V.—C. K., a Russian coal-miner, aged twenty-eight, from Schuylkill County, was admitted to the Hospital of the University of Pennsylvania, April 12, 1893. On account of his total ignorance of English no family or previous personal history could be elicited, except the indefinite statement that his feet had been swollen for ten years, and yet that he was perfectly well up to three weeks before admission, and working in a coal-breaker.

On admission he was gasping for breath, in an unpleasant, grunting manner. His heart was extremely irregular, and at times beat so rapidly that it could scarcely be counted. It was noted soon after admission at 144, again at 166. His respirations on admission were 36; and when his pulse was 166, the respirations were noted at 46. His temperature was normal. His belly was distended with fluid. There was edema of the feet and legs—in fact, general anasarca—and he lay in such a stupid state that it was difficult to get any information from him. On admission he was expectorating a blood-stained mucus, regardless of time or place.

Physical examination revealed the liver to be much enlarged and tender; the heart not much enlarged, but acting tumultuously, and no murmur could be detected. Subsequent examination showed the right boundary of the right ventricle at the right edge of the sternum, indicating enlargement of the

right heart. The examination of the lungs, on admission, was not satisfactory, because of the extreme illness of the man, and his disgusting, filthy state. The urine was scanty, high-colored, and bile-stained. It contained only a moderate amount of albumin, from one-twentieth to one-eighth of its bulk, but numerous hyaline and pale granular casts.

Under full doses of the infusion of digitalis he improved quite rapidly, the pulse and breathing rate coming down gradually. The rhythm of the pulse also improved, and the anasarca diminished. On the 30th of April his pulse had fallen to 64, and my note reads: "Although the pulse is slow and forcible, no murmur is detectable, yet we feel sure there is mitral regurgitation." His improvement was so great that he was even allowed to sit up. On May 5th, his temperature began to rise, and concurrently his breathing to be more frequent. On the 11th the signs of fluid in the left pleura were apparent (probably had shown themselves a couple of days earlier, because, on account of difficulties, he was not examined daily). The respirations were 50, but the pulse did not rise above 108, and for the first time a distinct mitral systolic murmur was audible. On the 14th it was thought a murmur was heard, but repeated examinations, even when his heart was at its best, failed to detect anything definite until the 11th. The man died suddenly a day later.

The necropsy was most instructive. The lesions were numerous, but most interesting in this connection was the association of extreme mitral stenosis, in the shape of a button-hole mitral orifice, and a pair of typical large white kidneys, beginning to undergo contraction. There was also enlargement of the heart, more especially in the direction of the right ventricle, as recognized before death, associated with marked dilatation of the left auricle. There was a left-sided empyema of recent origin, as shown by a fresh layer of thick lymph, probably the immediate cause of death; anthracosis, or miner's lung, with cavities; an enlarged hypertrophically cirrhotic liver; an enlarged spleen with two pyoid sacs, probably softened infarcts.

The fourth case was a complete surprise in the light of the autopsy; yet I am doubtful whether, with the situation repeated, I would make a different diagnosis. The distinct mitral systolic murmur and the extreme anasarca, the scanty urine and pleural effusions, all combined to favor the idea that there was mitral regurgitation, while the fact that the man had had two seizures, best explained on the supposition of cerebral embolism, of which a cardiac embolus is the most common cause, seemed to add all that was required to make the diagnosis absolute. One symptom only might have suggested a renal origin, and that was the degree of hypertrophy of the left ventricle, without aortic disease. Mitral regurgitation, while causing hypertrophy of the left ventricle, seldom produces the extreme hypertrophy that attaches to aortic valvular disease or chronic renal disease without aortic valve disease. At the same time the extent of this hypertrophy was not appreciated before death, because of the difficulty of investigation occasioned by the naturally thick chest-walls, further thickened by anasarcous infiltration. Under the circumstances, the mitral murmur is best explained on the supposition that there was mitral regurgitation consequent upon dilatation of the hypertrophied left ventricle.

Yet, notwithstanding the difficulties encountered in the separation of heart-disease from kidney-disease, there are certain points that, if borne in mind, aid in the discrimination. These points, already referred to, deserve, in conclusion, to be recapitulated: First, the conditions most likely to be associated or confounded are mitral disease on the one hand, and chronic parenchymatous nephritis on the other, or the last stage of interstitial nephritis, when the urine, from having been copious and light-hued, becomes scanty and dark-hued, because of failing cardiac power.

Chronic parenchymatous nephritis.	Chronic interstitial nephritis. (Last stages.)	Mitral Disease.
Urine scanty and high-colored; high specific gravity; highly albuminous.	Urine though scanty is still light-hued, and has low specific gravity; moderately or slightly albuminous.	Urine scanty and high-colored; high specific gravity; moderately or slightly albuminous; rarely highly albuminous.
Numerous granular, dark granular or fatty casts.	Few casts, and these hyaline or slightly granular.	Few casts, hyaline or slightly granular.
Much dropsy.	Little dropsy as a rule, though when heart fails dropsy may be marked.	Much dropsy; effusion into serous sacs.
No mitral systolic murmur.	No mitral murmur.	Mitral murmur.
As a rule no hypertrophy of left ventricle, which may, however, be present at times.	Always marked hypertrophy of left ventricle, except in persons feeble and cachectic at the outset; this without aortic murmur.	Moderate hypertrophy of left ventricle; hypertrophy of right ventricle.
No enlargement of liver.	No enlargement of liver.	Enlarged and tender liver.
No signs or symptoms of arterio-capillary fibrosis.	Symptoms and signs of arterio-capillary fibrosis may be present.	No arterio-capillary fibrosis.
No retinitis albuminurica.	Retinitis albuminurica may be present.	No retinitis albuminurica.
No history of gout.	History of gout, lead-poisoning, or free eating and drinking.	Seldom a history of gout, alcoholism, or free eating and drinking.
Seldom a history of rheumatism; more frequent of infectious disease.	No history of rheumatism or infectious disease.	Probable history of rheumatism or infectious disease.
Uremia infrequent.	Uremia frequent.	No uremia.
Partial response to treatment.	Doubtful response to treatment.	Generally prompt response to treatment.

These points of diagnosis refer more particularly to uncomplicated cases. With complicated cases the

difficulty is greatly increased, and the decision must be one of probabilities. A fact of great value in my judgment in favor of a primary and advanced kidney-disease, is the failure of heart-tonics like digitalis to produce diuresis, even though the pulse-rate is decidedly reduced by the action of the remedy.

Now, what is the practical bearing of these considerations? I answer, not so much in the direction of therapeutics as in that of prognosis. For, happily, the treatment of these conditions is essentially the same, and to this subject I have given very full consideration quite recently elsewhere.[1] In the matter of prognosis, however, it is of the extremest importance. For in cases of pure mitral disease, not too far advanced, the most favorable prognosis may be given, as evidenced by our experience with Case I. In the stage of renal disease under consideration, however, and in the combined form with actual structural change in both heart and kidney, the prognosis is very unfavorable, and to mistake the one condition for the other, and to prognosticate accordingly, may seriously jeopardize one's reputation.

SIMPLICITY IN THE TREATMENT OF FRACTURES.[2]

BY JOHN B. ROBERTS, A.M., M.D.,
OF PHILADELPHIA.

THE essential factors in the treatment of broken bones are, undoubtedly, the early replacement of fragments, the prevention of recurrence of displacement, attention to the condition of the soft parts, and due consideration of the patient's general health. After the reduction has been satisfactorily accomplished, displacement may recur through the action of gravity, muscular contraction, or the restlessness of the patient; and the surgeon must guard against such recurrence by applying some form of fracture-dressing that will retain the fragments in proper position. The best form of dressing will, as a rule, be that which corrects the tendency to displacement and, at the same time, steadies and immobilizes the limb. Special tendency to displacement varies with the line and position of the fracture, and should be recognized by the surgeon before he decides upon a form of dressing.

Fracture-dressings may be classed under three divisions: First, those that exert moderate continuous traction, or maintain the extension that was applied when the fracture was first adjusted; secondly, those that, by virtue of their rigidity or fixedness, resist retraction; and finally, those that, by virtue of their inflexibility, prevent angular or lateral displacement, by furnishing lateral support to the fracture.

These statements, which are almost axiomatic, will probably meet with the approval of all the members of the Society; but it is more than likely that, in a general discussion of the subject, there would be advocated a dozen different ways of treating the same fracture. It seems to me that surgeons often lose sight of the fact that simplicity in fracture-dressings is as much a surgical virtue as simplicity in the form of instruments used in surgical operations.

Simplicity in the treatment of fractures is often neglected because of an obsequious reverence for the names of former surgical teachers, which have become attached to a splint, or method of dressing. It is stated that legends and traditions connected with historic places never die; it is, unfortunately, true that surgical traditions have a similar lasting and often deleterious influence upon the progress of surgery. Illustrations of this are seen in the present use of Bond's splint for fracture of the lower end of the radius, an appliance founded upon an erroneous understanding of the nature of the injury, and one of the worst splints that could be used in the treatment of such a fracture. Physick's long splint for fracture of the femur is still used in this injury by many surgeons, who fail to realize that a more modern method of dressing is less troublesome to the attendant and more comfortable and safe for the patient. Desault's dressing for fracture of the clavicle has now no value except as a puzzle with which to entangle unhappy students under examination; yet it is probably still employed.

Many books are filled with elaborate descriptions of fracture-dressings, whose number seems to be limited only by the patience of the author. Hamilton's *Treatise on Fractures* is so full of these complicated splints and devices that the young practitioner must be hopelessly lost in selecting a method for treating a fracture under his immediate care. Individuals, as well as races, are born with mental characteristics that drive them to invent and advocate complicated methods in all the pursuits of life. The English and German surgeons perhaps illustrate this tendency to an extreme degree. Some American surgeons, partly from individual traits and partly from over-developed imitative faculties, are led in the same direction.

A truly wonderful illustration of this perversion of the mind is found in Bardenheuer's *Guide to the Treatment of Fractures*. I show a single illustration taken from his book in proof of my statement. Could anything be more preposterous than the

[1] "The Relations between Renal Disease and Disease of the Circulatory System," International Clinics, vol. iv, second series, 1893. "Treatment of Chronic Valvular Disease of the Heart," Therapeutic Gazette, April 15, 1893.

[2] Read at the meeting of the Medical Society of the State of Pennsylvania, at Williamsport, May 17, 1893.

method by which a patient with an ordinary fracture of the lower end of the radius is here treated? He is shown confined to bed, with weights and pulleys attached to his arm and hand so as to make traction in five different directions. Such a method of dealing with an injury, which ordinarily needs scarcely any splint, is a travesty of modern surgery. That even an American can accept such complicated dressings is shown by a visit to the wards of some of our large metropolitan hospitals. I recently saw in a hospital in a neighboring city a patient with a fracture of the thigh. The dressing was a Physick's long splint, combined with the extension-apparatus of Buck, and I think a plaster-of-Paris incasement —that is, this afflicted patient had about as much apparatus applied for his single fracture as would be required for the treatment of three patients with a similar injury. Any one of the appliances would be sufficient for an ordinary fracture of the femur.

Physicians coming to Philadelphia are, I think, often surprised at the simplicity of the dressings used in some of our hospitals. It is certainly gratifying to know that we do work in a less complicated manner than is the case in many other cities.

Another reason for a want of simplicity in fracture-dressing is that students are often taught during their pupilage that each fracture has its special splint; hence, they do not realize that the same form of dressing, with very slight alteration, will often answer for fractures in different parts of the body. I have never forgotten an expression used by Prof. Chiene, of Edinburgh, who told me that he disliked ready-made splints, as he did ready-made trousers—they never fitted.

Few will dispute the desirability of simplicity, provided that simple measures meet the indications and fulfil the surgical objects. Simple dressings are always attainable; they are cheap, and they are usually much more comfortable to the patient than more elaborate appliances. The latter are much more liable to become displaced and cause discomfort, and their intricacies are much less likely to be understood by the patient's friends or the hospital resident. The complication also tends to make the surgeon hesitate about removing the dressing, as much time, considerable assistance, and no little skill are demanded in its replacement. For this reason complicated dressings are likely to be changed less frequently than simpler ones, and the progress of the fracture less often noted. I am quite convinced that simple appliances that are readily removed and easily adjusted tend to yield better results, because of the more frequent examination and inspection given the injured bone.

I would obtain simplicity by disregarding all the unnecessary portions of dressings, and by selecting simple articles for retaining the fragments in apposition. The primary bandage often applied to the limb before the splint is adjusted is unnecessary and sometimes harmful; it is seldom used by practical surgeons of to-day. Embrocations of lead-water and laudanum, and of similar drugs, supposed to lessen the amount of inflammation at the seat of fracture, should be discarded, as they have no potent influence upon lessening the inflammatory exudate, and may, perhaps, by maceration of the skin, lead to blebs on the surface of the limb. Proper coaptation and freedom from muscular contraction are the factors most needed in the treatment of the inflammatory condition. With omission of the primary bandage and the embrocations, which some surgeons cling to as a sort of fetich, there is nothing to be applied to the fracture but the retentive apparatus. This should be of the simplest description. The surgeon who has sufficient individuality to refuse to pay for a carved or moulded splint of metal offered by an instrument-maker will seldom have difficulty in dressing a fracture in a simple manner.

The form of displacement and the character and seat of the fracture will give a hint to an observant surgeon as to the kind of apparatus to be used. Anything that tends to maintain the proper contour of the bone after reduction is what is needed. If wooden splints are used, they should be very light and seldom thicker than the lid of an ordinary cigar-box. Heavy splints, with much padding, are uncomfortable to the patient because of their weight and heat. In most fractures comparatively little strain is likely to be thrown upon the broken bone during treatment; hence, a splint with a moderate degree of rigidity is all that is needed to prevent displacement.

There is no question that the best splints in use are those that are moulded to the limb after reduction of the fracture. These fit any inequality of the surface without padding, and can, therefore, be very light, and are worn with comfort. Moulded splints are most readily made from butter-cloth, or cheese-cloth, dipped in plaster-of-Paris, paste, or glue. They are readily prepared, and can be moulded to the form of the limb without giving the patient pain. In some cases almost no apparatus is needed, because the parts may be put in the position that places the displacing muscles at rest and that insures proper coaptation of the fragments; for example, a fracture of the fibula, in which there is very little tendency to displacement, may be treated by simple bandaging, or even this may be dispensed with, because the parallel tibia makes an efficient splint. In some fractures of the phalanges an adjoining finger or toe acts as a good splint, or the finger of a glove, made rigid, will keep the parts in good position. A little additional firmness can be given to the glove-

finger by painting it with glue or mucilage. In the same way a stocking may be used as a splint, by making it a little more rigid with starch, plaster-of-Paris, or other hardening material.

The rapidity with which plaster-of-Paris, mixed with water, solidifies makes it, by all odds, the best material for moulded splints. Felt, or gutta-percha, may be softened by dipping it in hot water, and may then be moulded to the part; but these materials are not so easily obtained as gypsum or plaster-of-Paris, which is always to be found in any country store. Strips of gauze, or other woven fabric, may be converted into excellent splints by saturating them with plaster-of-Paris and water. Eight or ten of these strips when applied to a limb soon become hard and will hold it in position. Lateral, anterior, or posterior splints of any shape may thus be made and are to be held in place by a roller bandage. The plaster-of-Paris must be kept dry, for if it has absorbed moisture it will not set. The setting may be retarded by adding a little dissolved glue or borax, or cream of tartar, or by the use of cold water in making the mixture. Setting may be hastened by the use of hot water, or by adding a little common salt to the water. It takes very little skill to cut V-shaped pieces out of the gauze and to overlap the edges when the corners are to be turned; a moderately good surgeon can make a splint of this kind fit perfectly. In compound, or open, fractures, openings can be left or made in such splints. Strips of metal, to further stiffen the splint, or metal rings, for supporting a limb, may be incorporated in the layers of gauze and gypsum.

Sometimes we can use another part of the body to maintain apposition of the fragments. Thus, in fractures of the upper part of the humerus the thorax may be used as a splint, when the arm is bound by a bandage to the chest. Fractures of the lower jaw are usually treated by using the upper jaw as a splint.

In the treatment of open, or compound, fractures less simplicity is possible in the first dressing; but the surgeon who is fully imbued with the doctrines of antiseptic surgery will usually be able to convert fractures of this kind into what are practically closed ones. Thoroughly laying open the injured regions, scraping out all particles of dirt, scrubbing the parts well with soap and water and a nail-brush, and providing for removal or asepticity of all accumulations of blood, will enable him to put a dry antiseptic dressing and a splint upon the injured extremity, with the conviction that the wound will probably go on to recovery with very little variation from the clinical course of uncomplicated fractures in the same region.

It will perhaps aid in the discussion of this subject, if I give illustrations of simple methods of treating common fractures. It will be understood, of course, that my personal preferences are shown by these illustrations; but, naturally, there are many other equally simple methods of treating the same injuries, which may be adopted by other surgeons. These descriptions necessarily refer to such fractures of bones as are ordinarily seen, and not to cases of unusual severity.

Fractures of the clavicle are usually satisfactorily treated by Sayre's adhesive-plaster dressing, consisting of two long strips of plaster, which act by drawing the upper part of the humerus backward, fixing the lower angle of the scapula, and pushing up the elbow. Fractures of the clavicle unite with less deformity, as a rule, if the patient is kept upon his back for a week or ten days, so that the scapula is held in position by the weight of the body pressing against a hard, smooth mattress. The supine position, with arm and forearm thrown across the patient's chest, usually allows the fragments to fall into proper position. Such recumbency for a few days gives a chance for the tissues surrounding the seat of injury to become more or less rigid with inflammatory exudate, and there is, therefore, less danger of recurrence of the deformity when the patient is allowed to walk about with Sayre's dressing applied to the injured region.

Fractures of the upper end of the humerus are successfully treated by putting a towel in the axilla, and then bandaging the upper arm to the side of the chest, having the forearm, which is otherwise free, carried in a sling.

Fractures of the middle of the shaft of the humerus are well managed by an internal angular splint, preferably made of gauze and plaster-of-Paris. Fractures of the lower end of the humerus are best treated with the elbow in the extended position, so as to retain the carrying function of the arm. I prefer holding the elbow in this position by a splint of wood having the obliquity of the normal axes of the arm and forearm or by means of a gypsum splint.

Fractures of the forearm require an anterior and a posterior straight splint, which should be neither too wide nor too narrow. Fractures of the lower end of the radius usually require nothing but a wristlet, or band of adhesive plaster, carried around the lower end of the bone to restrict the movements of the wrist-joint after reduction. Where there is unusual comminution of fragments a straight wooden splint, about six inches long and an inch wide, placed on the back of the wrist, is all that is required. Fracture of the olecranon demands scarcely more than a wooden splint about eight inches long and one inch wide, in front of the elbow, to prevent flexion. Fractures of the femur, whether of the neck or shaft, or above the condyles,

can generally be well treated by permanent traction, made by attached adhesive plaster and a weight fastened to a rope going over a pulley at the foot of the bed.

By altering the direction of the traction, the surgeon will find this method satisfactory in all ordinary cases. Sand-bags at the sides of the femur, to prevent displacement, or a short splint of binder's board around the thigh at the seat of fracture, is the only additional apparatus likely to be needed. Sometimes this can be omitted. For fractures of the tibia and fibula, a fracture-box, or plaster-of-Paris splints meet all the ordinary indications.

SCIENTIFIC OBSTETRICS IN PRIVATE PRACTICE.[1]

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IF one were asked the meaning of the word "scientific," a proper definition would be found in a phrase indicating the possession and dissemination of knowledge. A scientific journal is one that contains and disseminates knowledge of the subject of which it treats. Modern medicine is a science in so far as it contains valuable knowledge concerning human life and disease, and scientific obstetrics is the theory and practice of this branch of medicine, characterized by accurate knowledge.

In this one point of the possession or absence of accurate knowledge rests the difference between the obstetric practice common in the United States twenty-five years ago and the theory and practice taught at the present day. Impressed with the ability of nature to deal successfully with the emergencies of labor, the practitioner who attended obstetric cases has been wont to comfort himself with the axiom that labor is a natural process, of which he need not seek to ascertain too minutely the details. The condition of pregnancy he regarded as naturally normal, and hence without especial tendency to disease. The lying-in period was to him a natural stage in the life of the individual, and required at his hands no especial scrutiny. An accurate diagnosis as to the factors present in a given labor was rarely made, unless some serious emergency arose.

There have been many reasons for this condition of affairs. The comparatively recent discovery of anesthetics placed at the disposal of the obstetrician a means of diagnosis of inestimable value. The employment of antiseptics has rendered possible manipulations for the diagnosis and treatment of labor that formerly were impracticable. Methods of diagnosis are now commonly taught and practised that, at the period mentioned, were only to be seen in practice in the large hospitals of Europe. Modern obstetrics has, then, great advantages in its opportunities to acquire thorough knowledge of the patient and of her labor, and this, too, without the infliction of additional pain, or the incurring of added risk to life. The characteristic of modern obstetrics is its scientific element, as shown in the accurate knowledge that it requires concerning matters formerly thought to prosper inevitably through the kind coöperation of Nature.

Scientific obstetrics is the rule in the modern hospital, but it is often "honored more in the breach than in the observance" in private practice. The reasons for this are many. First, among all, is the common belief, derived largely from physicians and nurses, that, because labor is a natural process, it is bound to proceed successfully without intelligent supervision. If this is true, why should a patient tolerate palpation, auscultation, or pelvimetry; or why should she take an anesthetic when the mechanism of labor is interrupted, and a thorough examination of the condition present becomes necessary? A common belief that has descended from the days of the early craniotomist, or man-midwife, as he was termed, is that any interference with labor means, practically, the use of forceps, and hence the objection to critical examination in an emergency. Again, it not infrequently happens that a complicated labor terminates spontaneously, and apparently with success to mother and child. It does not occur to the patient and her friends that complications may have arisen, by reason of the long continuance of the spontaneous labor, that could have been avoided had intelligent interference been practised.

There is especial need for scientific obstetrics in private practice, because the practitioner is more directly responsible for the condition of his patient than when he is engaged in hospital practice. He lacks in private the experienced observation of trained nurses; he misses the intelligent coöperation of resident physicians; and experiences the great disadvantage that the absence of order and discipline, so common in a private house, entails upon him. It is, therefore, especially necessary that he gain thorough knowledge of his patient by personal observation and study, and this knowledge is the essential of scientific obstetrics. The fact that the best results in obstetric practice are observed in hospitals, draws attention to the need for scientific work in private cases.

Omitting a consideration of the minor details of private obstetric practice, we urge the importance of a thorough examination by the practitioner of all pregnant patients. We are well aware of the fact

[1] Read before the Section on Obstetrics, American Medical Association, Milwaukee, June, 1893.

that many cases are not seen by their attendants until labor is far advanced, and no opportunity has been given to examine the patient during pregnancy. This is growing to be, however, less the case than formerly, and especially in first pregnancies, when the natural dread of an untried experience brings the patient to the physician comparatively early. This scrutiny of the pregnant patient should be directed especially to ascertaining the condition of the organs of elimination, and the success attending their action. The examination of the urine should be an invariable practice, and valuable information will be given by ascertaining not only the presence or absence of albumin, but by careful microscopic study of the sediment, and also an estimation of the amount of urea excreted. In the Maternity Department of Jefferson Medical College Hospital we have for some time derived valuable information regarding a patient's eliminative powers by ascertaining the quantity of urea excreted. The presence of albumin is of itself a trifling matter, unless the microscope reveals evidence of decided structural change in the kidney.

At or after the seventh month of pregnancy it becomes the duty of the attending physician to ascertain the mother's size, and the relative size of the fetus and the position that it occupies in the mother's pelvis. This is a procedure commonly thought unnecessary, and reserved for the lectures of those who teach obstetrics. That such is not the case is well exemplified by two fatal cases, seen by me recently in consultation, in both of which embryotomy upon the dead fetus was necessary. Two well-developed male children were sacrificed to a lack of diagnostic skill on the part of the medical attendant, and to complete the unfortunate history of those two cases, the lives of the mothers were lost on account of the stupid laziness of the physicians, who neglected to use antiseptic precautions during labor. In both cases the child had perished before the consultation, and the embryotomy was performed to spare the medical attendant from reproach and criticism for his failure to deliver the mother. These four lives could have been saved had proper precautions been taken.

The practice of general medicine, including obstetrics, in country towns or villages, often taxes to the utmost the skill and wisdom of the so-called "country doctor." As a result, he has a range of experience unknown to his city brother, and becomes by natural development more assured, self-reliant, and efficient. He is the man who, above all others, can appreciate the value of any method of practice that shall add to the positive knowledge he has of his patient. We do not ask him to provide himself with elaborate or costly pelvimeters, or instruments for diagnosis, but, as is our custom in lectures at the Philadelphia Polyclinic, we do urge upon the general practitioner a knowledge and practice of palpation, auscultation, and of such a method or methods of estimating the size of the mother's pelvis and the relative size of the fetus as may be within the scope of his possibilities. No student graduates from a well-appointed medical college who is not in the possession of this knowledge, and certainly the general practitioner already established cannot afford to be behind the recent graduate in his resources. The objections urged against the examination of pregnant patients, including the measurement of the pelvis, are based upon needless exposure of the patient, or rude and unskilful manipulation. We have yet to find a private patient, of whatever station in life, who offers the slightest objection when her physician asks that he be given an opportunity to acquire a knowledge that shall the better enable him to care for his patient, particularly if, by so doing, he subjects her to no exposure, nor to tedious and painful manipulation. The abdomen of the patient may remain covered by one thickness of cotton or linen, without in the least inconveniencing the physician, and medical students under my instruction are taught to make their examinations in this manner.

One of the great advantages accompanying this mode of practice is the lessening of vaginal examinations, which are a source of considerable danger to the patient. It is perfectly possible by palpation alone to follow the head of the child as it descends through the pelvic canal and impinges upon the pelvic floor. The character and efficiency of the pains of labor may also thus be accurately observed, and oftentimes valuable assistance can be rendered by external pressure gently and judiciously applied.

When the mechanism of labor is interrupted, a thorough internal examination is at once indicated. This is often impracticable without the administration of an anesthetic. The practitioner should be prepared to interfere for the assistance of the patient. Forceps should be prepared and ready. The rectum and bladder should be emptied, and, while it is not necessary to state to the patient that an operation is to be performed, yet, while she is under the influence of the anesthetic, it may be found wise to terminate the labor. It is often impossible to accurately diagnosticate a faulty position of the head without an anesthetic, the resistance and suffering of the patient being so great that sufficient of the hand cannot be introduced to make a thorough examination. When, however, such an examination has been made, and before the examining hand has been withdrawn, the forceps may often be accurately applied to the sides of the child's head, and the labor brought to a successful termination. In other cases, version and extraction may be found neces-

sary. In either event, examination of the patient under anesthesia will spare her hours of suffering, and will often save the life of an infant, and sometimes that of the mother.

The same thoroughness in treatment should obtain in the diagnosis and treatment of injuries to the genital tract. By the term "laceration of the perineum," we understand a solution of continuity that extends more deeply than the posterior commissure or fourchet. We are aware that a laceration in the median line may extend beyond the fourchet, and still not impair the supports of the uterus to any appreciable degree. When we read and hear of large numbers of cases of labor in which no laceration of the perineum has occurred, we are impressed with the fact that those who record such extraordinary experiences either consider that a laceration of the perineum usually extends into the rectum, or else that they did not accurately examine the cases. The examiner may be readily deceived by a superficial examination by the finger only of the genital canal, soon after labor. Clotted blood often fills a torn surface, giving to the finger the same continuity of smoothness that marks the uninjured mucous membrane. It is only by the thumb and finger, one inserted in the rectum, or, better still, by actual inspection, that the condition of the genital tract after labor can be accurately ascertained. Considerable observation of labor-cases, and the careful employment of the best-known means for preventing laceration of the perineum, have convinced me beyond reasonable doubt that such an injury is inevitable in many cases. It is negligent not to discover it; it is lazy and dishonest not to endeavor to repair it.

Fortunately, in these matters, public sentiment is demanding the advantages of scientific obstetrics. We recently had occasion to tell a young woman that she had sustained a laceration of moderate extent that ought to be closed. She said that if such was the case, she earnestly desired that it be at once repaired, as her sister had suffered from the neglect of her physician in not suturing a similar laceration. We are furthermore helped in dealing with these questions by the fact that experience shows us that excellent results may be obtained as late as twenty-four or thirty-six hours after the occurrence of a laceration. It is far better practice to give the patient and physician twenty-four hours' rest after a trying labor, and then, under anesthesia, or with the use of cocaine, close a laceration under favorable circumstances, than to further exhaust a weak patient, and with poor light and laboring under great fatigue, to improperly perform the physician's duty. If torn surfaces are found glazed over, the simple expedient of scraping them with the blade of a pair of scissors, or with a curet, will suffice to secure union by first intention.

It is burdening you with a trite observation to speak of the importance of obstetric antisepsis or asepsis, and yet the same reasoning that enables the practitioner to assert that in his 1000 cases he has never had a lacerated perineum, leads him likewise to claim that his 1000 cases he has never had a case of puerperal septic infection. He may have avoided signing a death certificate for a patient recently delivered, the certificate bearing the words "peritonitis," "blood-poisoning," "inflammation of the bowels," or "puerperal fever"; but cases occasionally perish some weeks after labor, with "jaundice," "pneumonia," "congestion of the liver," or "malaria," that, on closer study will be found to be the results of puerperal septic infection. The faithful practice of aseptic or antiseptic precautions greatly lightens the load of responsibility that the practitioner of obstetrics must carry.

Not the least of the advantages derived from the scientific practice of obstetrics lies in the avoidance of interference by those who have no right to molest the patient. The practitioner's best efforts are often thwarted by ignorant and meddlesome persons. He cannot, however, honestly forbid interference, unless he knows positively that there is no occasion to molest the patient. He will obtain the best results in obstetric practice who does the work himself, unless he can command, for certain things, the assistance of a trained nurse. Thoroughness in diagnosis, the faithful observance of antisepsis in treatment, and the protection of his patient from meddlesome interference, will give the best results. Such a method of procedure is thoroughly scientific, for it demands the best knowledge, the most careful and skilful manipulation, and, above all, an honest and fearless attempt to meet the difficulties that may arise. In the present stage of medical science, every woman has a right to demand such treatment, and if a practitioner of medicine cannot give his patient such care, he must inevitably, by the inexorable law of the "survival of the fittest," give place to those who can.

PREPUTIAL ADHESIONS IN CHILDREN, WITH CASES.

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THE bearing of preputial adhesions in children on the causation of various reflex disturbances has been recognized and mentioned by writers for many years, but there seems to be a general tendency on the part of physicians to either greatly over-estimate the importance of the subject, or, more commonly, to lose sight of its significance entirely.

In December, 1892, I began a systematic examination of the genitals of all children coming under my observation with histories of disorders that might possibly be of reflex origin, including all of those indefinite symptoms so often ascribed to the presence of intestinal worms, together with every other morbid condition for which I did not at once see an adequate and evident cause.

The results of this investigation were not in the least degree startling; nor did I expect them to be so. Some of the cases examined had no adhesions whatever of the kind in question. Many of those that did present such adhesions were not benefited in any way by the removal of the condition; but, on the other hand, a sufficiently large number of children were so completely and so promptly relieved of their trouble that I am convinced that such an examination should never be neglected in any instance in which the prepuce might be thought to occasion reflex irritation.

The cases that have been selected as illustrations will serve to show the varieties of symptoms that may be due to the existence of preputial adhesions. I have not attempted to compile any statistical tables, but it may be safely said that *almost every child*, male or female, will be found to present some adhesions—possibly very slight ones—between the prepuce and the glans of the penis or of the clitoris, as the case may be. The time necessary to inspect the genitals and break up any adhesions that may be found is of so short duration that the comparatively small proportion of cures resulting from the procedure should deter no one from trying the experiment. Two or three minutes spent in this way *may* save a child many weeks of medication and discomfort, and its parents a considerable amount of anxiety and worry, to say nothing of the credit that will accrue to the physician if he be successful:

CASE I.—Priscilla ——, a colored child, eight and a quarter years of age, was seen at the Northwestern Dispensary, December 30, 1892. There was a history of pain in the right leg and groin for one day, causing her to limp. There had been incontinence of urine for two years, steadily growing worse. The urine was voided every hour by day, and often at night. The desire to urinate would arise suddenly, and without warning, and was sufficient to awaken the child from sleep. She never "wet the bed," in the ordinary acceptation of the phrase. She had exhibited choreic motions for two years, and was a "nervous" child, easily frightened. She often had "nightmare," and ground her teeth, and talked and moaned in her sleep every night. The prepuce was completely adherent to and entirely covered the glans clitoridis.[1] Retraction was attempted under cocaine on December 31st, but was given up on account of pain. Chloroform was administered,[1] and retraction was effected. No smegma was found between prepuce and glans. On January 1st the child's condition was unchanged. The prepuce was cleansed and dusted with iodoform. There was slight purulency of the denuded surfaces, due, probably, to a previously existing vaginitis.

On January 2d, the condition was yet unchanged.

On January 4th the child went to school. Urination was less frequent, and sleep was perfectly quiet. The child's father thought her general health better; he said that she was more lively, and less irritable.

On January 6th the child urinated less frequently, and with less distress than formerly. The pain in the leg and groin had entirely disappeared. The chorea had ceased entirely. There were no more "nightmare," and the like. Sleep was perfectly quiet.

This child has now been under my observation for nearly five months, and there has been no return of her symptoms. She has received no medicinal treatment of any sort.

CASE II.—Madge ——, a white child, ten years of age, was seen at the Northwestern Dispensary, on December 30, 1892. She gave a history of incontinence of urine for several years. The urine was not voided much oftener than normal, but micturition was sudden and without warning, occurring often in the street, and *sometimes* at night. She had "wet the bed" regularly up to four years of age, but seldom thereafter. She had presented choreic motions of increasing intensity for several years. She ground her teeth at night, and had "nightmare" constantly.

She had been treated for "worms" two years previously. No worms, however, appeared in the stools. For over a year and a half there had been pain in the leg and groin, mostly at night, interfering with rest. There was often merely a desire to stretch the leg. Asthma and dyspnea occurred on the slightest exertion for over two years. There was pain over the chest, stomach, and liver. The lungs and heart were normal. The child was slightly anemic, but its general condition was fair. The bowels moved once daily. There was slight edema of the lower eyelids that might have been due to anemia. The child had had measles, but the edema had been present previously. There was no history of scarlatina or of diphtheria. The prepuce was tightly adherent to and almost entirely covered the glans clitoridis. It was retracted under cocaine. There was no smegma. The surface was dusted with europhen. A teaspoonful of mistura rhei et sodæ, after meals, was prescribed. On January 2 the urine had a specific gravity of 1010, was of acid reaction, light-yellow color, clear, and contained no albumin. The prepuce was cleaned and dusted with iodoform.

The urinary symptoms were slightly worse, probably as a result of the additional irritation set up

[1] This condition is said to rarely occur in females of the negro race. Vide Morris, Amer. Journ. Obstet., Dec., 1892.

[1] General anesthesia was employed at the special request of the parents of the child. Vide the writer's article referring to this case, in THE MEDICAL NEWS, April 8, 1893.

by the freshly denuded surfaces of the prepuce and glans.

On January 4th the child was better as to sleep, pain in the leg, and urinary trouble.

On January 6th there had been no urinary trouble whatever since January 2d. The child was able to retain its urine, even when the desire to urinate had existed for some time. There had been no chorea or nightmare since January 1st, and no pain in the leg or groin since January 2d. There had been no dyspnea or asthma since January 2d, except on *severe* exertion. There was no more pain over the chest, stomach, or liver. The bowels moved twice daily. The rhubarb and soda mixture was withdrawn.

This child received no medication beyond the rhubarb and soda mixture mentioned. I have seen her at intervals of one or two weeks for several months. None of her troubles has reappeared.

CASE III.—James ——, a white child, seven years and ten months old, through his mother, applied for admission to St. Mary's Hospital, January 2, 1893. The mother believed the child to be ill with rheumatism. I visited his home to examine him for admission, and found him in bed. There was a history of severe pain in left foot, beginning a week before at about 5 P.M. The pain had extended up the leg to the hip by 9 P.M. of the same day, and was very severe during the night. The pain was intermittent and lancinating in character. There was no history or evidence of injury or local disease. On the following day the function of the leg was lost. The part could be moved only with great pain, and walking was impossible. On examination it was found that the pain was slight by day, provided the leg was not moved, but it became very severe by night, causing loss of sleep. The child cried out with pain during the night, and talked, moaned, and ground his teeth in sleep. He had been constipated several days ago, but the bowels were now regular. There had never been any urinary disorder. The leg had been wrapped in cotton-batting, and a turpentine liniment had been applied by the direction of a physician. The slightest manipulation caused great suffering. There were no signs of inflammation in any part of the leg. The pain was now chiefly confined to the left leg. The orifice of the prepuce was small, but the glans could be easily exposed. There was a *very slight* adhesion on the left side (the left leg was affected), near the frenum. This was readily broken up. All dressings (cotton-batting, etc.,) were removed from the leg, and no medicine was given. The child was not admitted to the hospital, but was told to get up and dress himself as soon as he felt so inclined. On January 4th the boy was up, and had no pain whatever. He could move the limb in every direction, and could walk, kick, and hop with the leg. On January 6th he was up and dressed. There was absolutely no pain or interference with the function of the leg. Six weeks later there had been no return of the symptoms.

Many more cases of this kind could easily be cited, but these are enough to emphasize the point in question. I have selected three instances, occurring within four days of each other, merely to show how little difficulty I met with in collecting data. None of these children had ever come under my notice before. As stated in the introduction to this paper, a large number of those children in whom adhesions were found were not benefited in any appreciable way by the removal of the condition, but no harm was done in breaking up the adhesions and placing the parts more nearly in their normal relations.

The technique of the procedure, if so important a term may be used, is too simple to require more than the briefest mention.

Boys with actual congenital phimosis should, of course, be circumcised, but in cases in which the orifice of the prepuce is of sufficient size to permit free exposure of half of the glans, the adhesions may, as a rule, be broken up by mere traction on the parts with the thumbs and fingers. If this is not enough, a blunt probe passed under the prepuce and swept around the glans, will complete the separation. Care must be taken to fully expose the corona, back of which considerable smegma will often be found. The frenum should also be carefully inspected, for, as shown in Case III, a very slight adhesion may be the cause of severe symptoms. The parts should then be thoroughly cleansed with warm boric-acid solution, dusted with some antiseptic powder, and anointed with vaselin or a bland ointment.

The penis should be inspected, and the prepuce fully retracted daily for three or four days, or until the mucous membrane has healed, in order to prevent the parts from growing together again. If the symptoms are actually due to the adhesions, they will probably be increased somewhat for the first day or two, owing to the additional irritation. If the symptoms return after two weeks or more, the parts should again be examined for fresh adhesions.

In girls the prepuce may be seized with a thumb forceps, and a probe will readily separate it from the glans clitoridis. The precautions and after-treatment already described are then to be carried out.

As a rule, the pain is very slight, and if an anesthetic is at at all needed, cocaine is all that is necessary. I do not think general anesthesia is to be recommended for so trifling a matter, as there is always an element of danger in its use.

The idea of carefully investigating this subject in children was suggested to me by the very interesting paper by Dr. Morris, in the *American Journal of Obstetrics*,[1] in which he describes the condition as it exists in young women.

341 WEST FIFTY-SIXTH STREET.

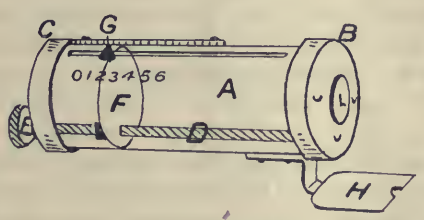
[1] Op. cit.

A NEW EYE-MODEL (ANAKLASIMETER[1]) FOR DETERMINING THE REFRACTION BY OPHTHALMOSCOPY AND RETINOSCOPY.

BY CARL WEILAND, M.D.,
CLINICAL ASSISTANT, EYE DEPARTMENT, JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA.

THAT an *accurate* and *inexpensive* apparatus for practice with the refraction-ophthalmoscope is a desideratum will be conceded by all that have endeavored to avail themselves of this most valuable aid of ophthalmology. The tyro, especially, who has to learn the use of the ophthalmoscope and who must endeavor to relax his accommodation, is very much in need of an instrument that will allow him to accurately observe how far he has succeeded in his efforts; or, if he cannot relax his ciliary muscle wholly, how much accommodation he still employs in his observations.

It is for this reason that I have constructed a little model of the eye, which by axial changes permits the accurate determination of all refractive conditions from —10 to +10 dioptries, with or without astigmatism, in gradations of 0.50 dioptry, if wanted. The little apparatus consists essentially of a blackened tube, A (diagram), about one inch



Half of actual size.

in diameter and three and one-half inches in length, and closed at either extremity by metal discs, C and B, the anterior disk, B, having a central opening of about one-half inch, which contains a lens of +20 D power. Near the bottom of the instrument is a screw, D, which extends along the whole length of the tube and has at the back a little handle, E, which projects from the posterior disc and allows the screw to be turned. Along this screw there slides on a nut a plate, F, representing the retina, the position of which is indicated on the outside of the tube by a pointer, G. The number to which the pointer is directed indicates the refractive condition of the eye, the white numbers applying to the degree of hypermetropia and the red ones to the degree of myopia. From the anterior part of the tube projects a metal plate, H, which supports the ophthalmoscope and is so constructed that if the ophthalmoscope rests against it the lenses of the latter are exactly fifteen millimeters from the lens of the eye-model. In order to produce an astigmatic eye three little hooks are attached to the anterior plate, B, so that a —2 D cylinder can be slipped in and turned to any desired angle.

As, of course, the eye of the completely relaxed emmetropic observer is only adapted for parallel rays, it will only see the objects on the artificial retina distinctly if the rays coming from the eye-model have been made parallel by the lens of the ophthalmoscope. The numerical value of these lenses for the different positions of the retina can be easily calculated as follows: If f is the focal distance of the lens of the eye-model and d the distance of the artificial retina from this lens, then, by the known laws of refraction, b, or the distance of the image of the retina from this lens, will be determined by means of the formula: $\frac{1}{b}+\frac{1}{d}=\frac{1}{f}$; from which we find that $b=\frac{fd}{d-f}$. This equation shows that b is positive as long as d is greater than f, *i.e.*, the image of the retina falls in front of the lens, and we have therefore to do with myopia. The ophthalmoscopic lens is 15 mm. in front of the lens of the model, or b—15 mm. from the retinal image; it is therefore necessary to find a minus lens that has a focal distance of b—15 mm., so that the rays that would come to a focus b—15 mm. behind the ophthalmoscope are made parallel after their passage through this lens. The focal distance of this required lens must then be $b-15\text{ mm.}=\frac{fd}{d-f}-15$; or, in dioptries, its refractive power D must be $\frac{1000}{b-15}=\frac{1000}{\frac{fd}{d-f}-15}=\text{D}$.

From this we find that $d=\frac{(1000+15\text{ D})f}{1000-(f-15)\text{D}}$. This value for d shows us how far from the lens of the model we have to place our artificial retina in order to obtain a given number of (D) dioptries of myopia. In the same way we would find for hypermetropia that $d=\frac{(1000-15\text{ D})f}{1000+(f-15)\text{D}}$. (It must be remembered that the D's have to be taken with their absolute values only, without regard to the sign.) In this way the following two tables were found:

Myopia.

$d=50.00$	mm.	gives a	myopia	of	0. D.
$d=52.59$	"	"	"	"	1. D.
$d=55.37$	"	"	"	"	2. D.
$d=58.38$	"	"	"	"	3. D.
$d=61.62$	"	"	"	"	4. D, etc.

[1] From the Greek ἡ ἀνάκλασις, the refraction, and τὸ μέτρον, the measure. The usual word, *refractometer*, a compound of Latin and Greek stems, seems rather barbarous, and has therefore been avoided.

Hypermetropia.

d = 50.0 mm.	gives a	hypermetropia	of	0. D.
d = 47.5	"	"	"	1. D.
d = 45.3	"	"	"	2. D.
d = 43.2	"	"	"	3. D.
d = 41.2	"	"	"	4. D, etc.

In accordance with these two tables the scale of the instrument has been so constructed that all refractive conditions from —10 D to +10 D can be accurately determined. Practically all that is necessary is to take the model in one hand and the ophthalmoscope in the other hand, and then, after bringing the ophthalmoscope in contact with the rest, to find the highest plus or the lowest minus lens with which accurate and sharp definition of the details of the image can be obtained; and finally, to compare the number of the ophthalmoscope with that of the model. Perfect agreement shows perfect relaxation of the emmetropic eye; a plus lens in the ophthalmoscope too low or a minus lens too high by a certain number of dioptries shows just so many dioptries of accommodation used by the emmetropic observer. If the observer is not emmetropic, and if his refraction is not perfectly corrected, he has, of course, to make allowance for this in the reading of his ophthalmoscope.

If we place the cylinder of —2 D in its proper position in front of the +20 D lens we have then a sphero-cylindrical combination of +20 D in one and +18 D in the other main meridian. For the first meridian the former scale remains therefore the same, but for the +18 D lens a new scale is given below the other, so that the value of each meridian can be read off directly. Let, *e.g.*, the retina be at 85.7 mm. from the lens, then we find the pointer indicating a myopia of —7 D in one and of —4.5 D in the other.

How the instrument may also be used for retinoscopy will be clear from the foregoing description, and needs no further remarks. Of course, there are a good many contrivances that one might feel tempted to add, *e.g.*, a stand for the whole instrument, a changeable iris and a lens-holder in front of the rest for the ophthalmoscope, in order to get a point of reversal of 1 meter by using the lenses of the trial-case in this holder. The aim, however, has been simply to furnish a *reliable* and *inexpensive* means for the γνῶθι σεαυτὸν of the ophthalmologist and to omit all unnecessary accessories, which can be added, if desired. I am under great obligations to Mr. D. V. Brown, 740 Sansom Street, Philadelphia, for the elegance and accuracy with which the little apparatus has been constructed, and which is sold for $3.50.

315 North Sixth Street.

IMPORTANCE OF ARTERIO-SCLEROSIS IN THE ETIOLOGY OF POSTERIOR SPINAL SCLEROSIS.

By GEORGE J. PRESTON, M.D.,
of Baltimore.

In studying the pathologic anatomy of posterior spinal sclerosis, one is struck by the fact that the lesion is practically confined to the dorsal and lumbar regions. In advanced cases the cervical cord is also involved, but this is probably in great part a secondary degenerative change. Cases of pure cervical tabes are certainly very rare, so rare indeed, as almost to put in doubt their existence as a part of tabes. So far as the histology of the spinal cord is concerned there is no reason why this should be so; the fiber-tracts increase rather than diminish from below upward, and *a priori* we would expect to find a larger area of sclerotic tissue in the cervical region than in the dorsal or lumbar.

In looking about for an explanation of this fact the first thing that strikes us is that the blood-supply of the three regions of the cord is derived from somewhat different sources. The cervical cord, the lower limit of which may be placed at the sixth cervical vertebra, is supplied with blood chiefly by means of the branches of the vertebral arteries. The vertebrals enter the spinal canal at the sixth cervical vertebra, and after giving off lateral spinal branches to the cord, send off two branches, which unite to form the anterior spinal artery, and two smaller posterior spinal branches. There are also a few small branches from the deep cervicals. These spinal arteries, viz., the anterior spinal and the two posterior spinals, run the whole length of the cord, forming a series of plexuses which supply both the cord and the vertebræ. The anterior spinal artery probably supplies the gray matter, while the posterior arteries, by means of the plexuses spoken of, are probably distributed to the white matter.

Below the level of the sixth cervical vertebra, or in the dorsal and lumbar portions of the cord, another very important set of vessels comes in, namely, the intercostal arteries. Each intercostal artery sends into the cord a spinal branch which enters more or less into the formation of the plexuses already spoken of. We have in the dorsal and lumbar regions of the cord a set of vessels not found in the cervical region. Moreover, these vessels are, probably, in the lower part of the cord, the most important source of the blood-supply, as the spinal arteries are, even at their origin small and tortuous, and in the lower regions of the cord very much reduced in size. The spinal branches of the intercostals probably enter the cord as peripheral branches supplying the fibers and not the gray matter.

The bearing of these anatomic facts upon the

pathology of tabes becomes very apparent when we observe the character of the intercostal arteries. The intercostal artery is a small vessel coming off virtually at right angles to the great trunk of the aorta. Now, as Thoma, Welch, and others have shown, it is in this type of vessel that we find the beginning evidences of arterio-sclerosis. The mouths of these small vessels at length become surrounded with a mass of calcareous material and the lumen of the vessel more or less occluded. It is quite possible to have these small vessels involved before there is any general manifestation of arterial change. This is seen in the case of the renal artery, an artery of the same type, that is, coming off nearly at right angles to the large trunk.

After this condition of sclerosis, or, in a higher degree, atheroma, has involved the intercostal arteries, a diminished amount of blood would be sent to the spinal cord, and, as a result of this imperfect supply of nutriment, there occur atrophy and degeneration of the nerve elements. As a consequence of this degeneration of nerve-matter there starts, partly from the sheath of the nerve, partly from the bloodvessel, an outgrowth of connective tissue, which, in its turn, encroaches upon the softer, less resistant nervous matter, giving us the characteristic picture of sclerosis. It has been noticed that the vessels are very generally thickened in tabes, Gowers especially calling attention to this fact, but not enough stress has been laid upon the outgrowth of connective tissue from the sheaths of the nerve-fibers.

In considering the etiologic factors that by common consent are conceded to be the most important in the causation of tabes, we find the first place given to syphilis; next in importance, perhaps, is exposure to cold and wet, which in most instances means rheumatism; and third, but not as prominent as we would expect, is alcoholism. Now, these are exactly the conditions most favorable to the development of arterio-sclerosis. Syphilitic inflammation of the arteries differs in many particulars from the rheumatic and alcoholic forms, but, so far as the destructive process goes, is just as important. Experience has taught us that we can expect little more improvement in syphilitic arteritis than in arteritis from other causes. In a few cases, perhaps, treatment is effective, but only in a small percentage of cases.

The ultimate distribution of the various sets of vessels to the cord is still so imperfectly known that it is impossible to say how far we are warranted in applying this same idea to degenerative changes in the other fiber-tracts, or even in the cellular elements of the cord. Sclerosis of nerve-tissue is such a general process, such a common form of degeneration, that one cause is by no means sufficient to explain all cases. The idea suggested in this paper is meant to include the majority of cases. Undoubtedly, traumatism, peripheral disease, specific poisons, and the like, are accountable for many cases, and the connection between these causative influences and the disease in question is often very close.

With this idea of the pathology of posterior spinal sclerosis I have been treating three or four cases under my own observation, and a number of other cases under the care of my resident physician, with nitroglycerin. The principle upon which this plan of treatment rests is that thus the small branches of the spinal arteries are dilated, and a larger supply of blood thus afforded the cord. Of course this can, theoretically even, only be done to a comparatively slight extent. It is rather too soon yet to speak of results, but almost all of the patients thus treated have improved, some of them notably. The element of mental suggestion was carefully eliminated, or rather was guarded against, as the patients were not told that they were taking any special treatment, and the inquiries concerning improvement were not unnecessarily frequent. The most marked improvement was noticed in the relief of pain. Two patients reported that they had begun to notice great improvement in walking. The dose of the drug in most of the cases was one one-hundredth of a grain, in tablet form, three times daily. Occasionally it happens that a patient cannot comfortably take this dose, and I have had to reduce one-half, which seems almost infinitesimal, but in these susceptible persons one two-hundredths of a grain will flush the face. On the other hand, much larger doses may be given. One of my patients took for some time a fiftieth of a grain t. i. d. This patient, however, was not a tabetic.

It is probably premature to publish these notes, but I am anxious to see if this remedy proves as successful in other hands as it has in mine. Another point that I would like observed is the condition of the mouths of the intercostal arteries in cases of tabes. This is such a chronic disease that one has often to wait a very long time to collect enough autopsy reports to warrant the drawing of inferences.

819 N. Charles Street.

Spontaneous Disappearance of Gonorrhea in the Course of an Intercurrent Acute Disease.—At a recent meeting of the French Dermatological Society, Bogdan (*Wiener medicin. Presse*, 1893, No. 21, p. 817) reported the case of a male, eighteen years old, under treatment for gonorrhea, in which the urethral discharge ceased a day after the development of an attack of left-sided pneumonia, to return with its previous activity during convalescence.

Barthelémy stated that he had observed two analogous cases in connection with enteric fever. Death occurred in one, without a return of the symptoms of gonorrhea. In the other an acute epididymitis developed on the seventeenth day.

CLINICAL MEMORANDUM.

EXTENSIVE FRACTURE OF THE SKULL FROM AN UNUSUAL CAUSE.

BY W. M. L. COPLIN, M.D.,
ONE OF THE VISITING SURGEONS TO ST. MARY'S HOSPITAL,
AND
O. D. SCHAUL, M.D.,
RESIDENT SURGEON TO ST. MARY'S HOSPITAL

H. M., twenty-five years old, a laborer, was brought to St. Mary's Hospital by the patrol wagon, on February 20, 1893. Accompanied by a friend, the patient had been carrying a keg of beer, when he slipped, and his head was caught between the keg and the pavement. When brought to the hospital he was conscious, but could not open his eyes on account of the swelling of the lids and an extravasation of blood into the loose cellular tissue of the upper eyelids. There was a steady oozing of blood from the nose and from the left ear; sub-conjunctival hemorrhage was also present.

Upon examination, the right side of the head seemed very much flattened anteriorly, the flattening including the right frontal eminence, the upper portion of the temporal bone, and the lower angle of the parietal. In contrast, the left side of the head, more particularly the external angular process, and in a line directly upward from the anterior angle of the frontal bone, projected forward and toward the left. There was no evidence of fracture upon the back portion of the head on either side, and no indication of contusion was noted at the time.

The patient talked rationally, and gave fairly sensible answers to all questions. There were no manifestations of motor lesions, no difficulty in coördination. The patient was not severely shocked, and did not show any pathognomonic symptom of cerebral injury.

Over the right frontal eminence was a small lacerated wound, which presented some of the characteristics of a punctured wound. It could not, however, be traced to the bone, and apparently extended only through the skin and superficial fascia. The patient vomited, the ejected matter looking like tobacco, with possibly some blood that had been acted upon by the gastric juice.

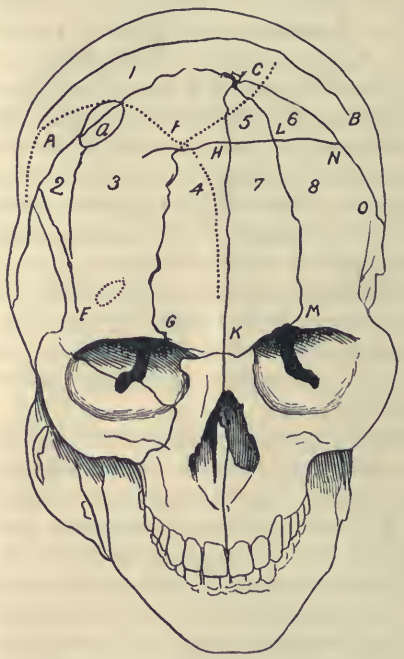
A line of fracture was found extending in the median line just above the forehead, and laterally down beneath the zygomatic arch. There were several areas over the depressed portion of the frontal bone, and one slightly back of the point of depression, that, to the finger, felt like wire under the tissues. These were, probably, the linear fractures to be described later on.

The head was shaved, and preparations made for an aseptic operation. An incision was carried over the median line of the anterior margin of the scalp, outward, backward, and outward over the apparent line of depression. All of the tissues were turned back, revealing a comminution of the anterior portion of the skull, as shown in the accompanying illustration. The trephine was inserted at the point shown in the illustration, and a small button of bone was removed. The rongeur forceps was then used to free the lines of fracture on either side, so as to permit of elevation. This was only partially successful. The fracture extending downward toward the base in the zygomatic fossa, and across to the orbital plate, could then be made out. From the anterior fossa several pieces of the base were removed. The accompanying illustrations show the lines of fracture.

There was no subdural clot, but there were several points of hemorrhage. Those in the dura were ligated, while those at the margin of the bone were arrested by plugging with threads of aseptic gauze. The latter procedure can easily be carried out by means of a needle, and is very efficient for the arrest of hemorrhage from vessels in bone. Quite a number of pieces of bone were removed from the orbital plate of the frontal bone, and a few that impinged on the cerebrum itself.

The dura was markedly lacerated at the base and in the temporal region. From all of these portions of laceration fragments of bone were removed. Little difficulty was found in arrresting the hemorrhage. A drainage-tube and some horsehair were passed down to the base, and carried out to the opening over the zygoma. The wound was then dressed.

FIG. 1.

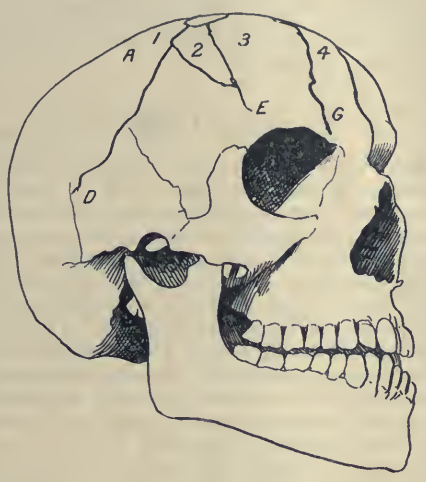


There were no evidences of fracture posteriorily, or on the opposite side of the skull, except the line that continued across, and as there was very little depression, and the patient was becoming considerably shocked, the wound was closed. Before it was closed, however, the finger passed under the dura showed that the points of depression were rather in the external plate than in the internal. The left ear was washed out with an antiseptic solution, and packed with mercuric-chlorid gauze. An attempt was made to treat the nose likewise, but was not fully successful, as the patient would not permit the packing to remain, and resisted every attempt at washing the nose out.

Immediately after the operation, which was completed at 2.30 A.M., on February 21, the patient was placed in a bed, and surrounded by hot bottles. At 3 A.M. he was resting comfortably, although he had not yet recovered from the ether. When consciousness returned he was restless and peevish, and readily annoyed. He com-

plained of being sore wherever he was touched, and repeatedly asked to be waked up. Even when he was answering questions intelligently he seemed to adhere to the fact that he was asleep. Immediately after the operation he was given gr. $\frac{1}{20}$ of strychnine, which was repeated three times during the day. He complained of moderate pain in the head. For the restlessness potassium bromid was offered, but refused. Once or twice during the day the man vomited. The vomited

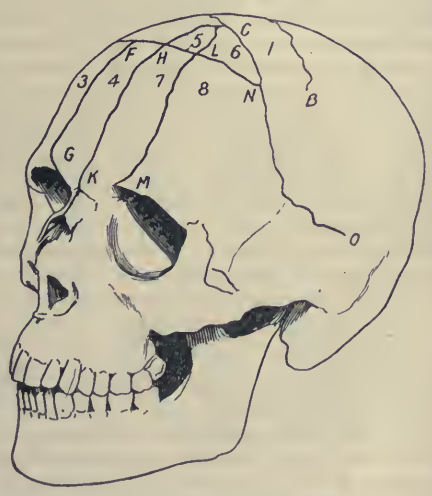
Fig. 2.



matter looked like tobacco-juice mixed with blood. The man could be induced to swallow but little nourishment—a little beef-tea and some milk.

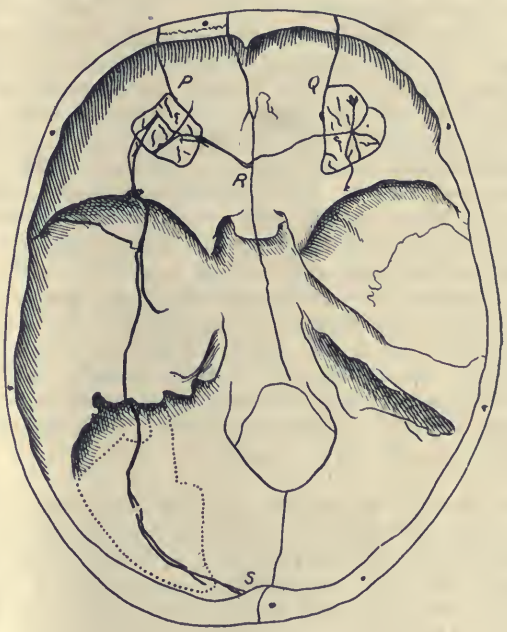
The wound was dressed on the morning of February 21, and showed no evidence of infection; there had been but little oozing. The oozing from the left ear continued; the hemorrhage from the nose had apparently

Fig. 3.



been arrested. There was intense ecchymosis around both orbits. In the afternoon, gr. $\frac{1}{8}$ of morphine sulphate was administered hypodermatically, after which the man enjoyed nearly four hours of quiet sleep. Whenever disturbed, he asked to be waked, and persisted that he was asleep. On the morning of February 22d, after a restless night, uneventful in any particular, the wound was dressed. There was no evidence of suppuration; the gauze was pretty freely saturated with serous oozing, and the flow from the left ear had been free and continuous. The patient was not fully conscious, but answered many questions intelligently. He seemed easily worried, and became annoyed by the slightest disturbance. He expressed a desire to know the day of the week, and regretted that he had not been able to vote. He also expressed a desire to go home, and told his mother that he would "be up right away." He continued to believe that he was asleep, and would not permit his eyes to be opened, as he believed that the opening of the lids would lead to blindness. He complained slightly of fulness and pain in the head. He made several attempts to rise from bed, and expressed a desire to go home, stating that if those about him did not stop resisting his movements he would "holler murder." He was restless, and rolled uneasily from side to side, and made numerous attempts to remove the bandage from his head.

Fig 4.



On February 23d the symptoms had not materially altered; the man still answered questions rationally, his delirium partaking of the desire to be waked up. His pulse was fairly good. He complained of pain and aching all over, without being able to definitely locate any point of pain of greater intensity. He was restless, and occasionally rose up suddenly, and asked to be awakened, and wanted to go home. The wound was dressed, and looked perfectly healthy.

On February 24th the restlessness was somewhat increased. The man persisted in strongly blowing his nose, and constantly wanted to go to the water-closet. His extremities were cold, and his pulse seemed weaker than on previous days. He was given one-thirtieth of a

grain of strychnine three times during the day. In the afternoon the restlessness increased, and attempts were made to retain an ice-bag on his head. The temperature rose to 102° F. The wound looked well; the drainage had been removed; there was some discharge from the left ear, although it had been suppressed on the day before. At 9 o'clock in the evening the pulse rose to 136; it was weak, later became fuller and slower, and reached about 100. At 10 o'clock he began to sink gradually; unconsciousness became more profound; there was picking at the bed-clothes, tremor of the hands and legs, and general cyanosis; restlessness ceased with the development of coma, and death occurred at 1 o'clock on the following morning, without any material alteration in the symptoms, except a progressive increase in severity.

On the first day the temperature rose from 98° F. to 100.6° F.; on the following morning it was 98.2° F., on the evening of the second day 99.4° F., on the morning of the third day 99° F., in the evening 99.2° F.; on the morning of the fourth day the temperature had dropped 4° F., to 98.8 F.; in the evening it was 99° F.; on the morning of the fifth day the temperature was 99.2° F., but by evening it had risen to 102.6° F., and at the time of death, on the morning of the sixth, the temperature had fallen two degrees.

The post-mortem examination was made six hours after death. The accompanying illustrations show the extent of the fractures. A large clot was present in the posterior fossa, between the dura and the skull, from the line of fracture on the left side. The right tempero-sphenoidal lobe was lacerated in an area one and one-half inches long, one inch wide, and one inch deep. At the lower portion of the left inferior frontal convolution the brain was lacerated in an area one and one-half inches long, one inch wide, and one inch deep. A little above the laceration, in the tempero-sphenoidal lobe, was a large vein, about the size of a goose-quill, occluded by a thrombus. All of the vessels of the pia mater and arachnoid were distended. A slight fibrinous exudate covered the convolutions in different areas, but was not universally disseminated upon the brain. Examination of the trunk was not permitted.

Remarks.—An examination of the illustrations and the post-mortem notes will indicate the extensive character of the injury sustained, and, at the same time, the small number of the cerebral symptoms that were present. It is probable that when vital centers are not involved the brain is competent to withstand most extensive traumatisms, and when asepsis is secured there is reason to believe that recovery will take place in a large percentage of cases. From the second to the fifth day after the accident there were no symptoms attributable to any grave lesion or inflammatory process within the cranium. This is well shown by the temperature curve, and is probably to be explained by the avoidance of infection. On the fourth or fifth day, by reason of defective asepsis, infection took place through the nasal cavity. It is probable that the Eustachian tube is always infected, and when the fracture passes, as this did, through the middle ear, it affords a seat for infective processes even better than does the passage of infective matter up through the fissured ethmoid. It is probable also that packing of the nasal cavities will more efficiently prevent infection through the superior nasal orifices than through the Eustachian tube. In a similar case we would be tempted to plug the posterior nares thoroughly, and treat the nose as a closed cavity, applying antiseptic solutions freely. We do not think that asepsis can be secured in the nasal cavities by washing out and packing, without at the same time plugging the posterior nares. While it is probable that the elevation of temperature is to be ascribed to infection, it is not impossible that this may have been due to the process of repair and an exudation of serum; but the lateness of the rise rather indicates that infection occurred, and to this death is to be attributed.

Explanation of Illustrations.

A B, linear fracture, posterior to the coronal suture at A, slightly anterior to the coronal suture at B. C, point of union directly over the longitudinal sinus. Q, on the interior of the skull, marks the point where the linear fracture, F G, continues through the orbital plate, and terminates in the comminuted mass in the orbital plate of the frontal bone. It will be seen that the two comminuted areas, P and Q, communicate with each other through the linear fracture that crosses the median line at R, and is there continuous with the linear fracture, C H K, on the external surface, the line of fracture stopping at R. From the comminuted area P we have a linear fracture extending backward through the semicircular canals, possibly involving the cochlea, and terminating at S, slightly above the torcular Herophili.

It will thus be seen that every bone in the cranium was fractured, and all in most unfavorable situations, except the right temporal bone, which only had the upper angle of the squamous portion fractured to an extent of about one inch.

a marks the area from which the trephine button was removed. 1 is intended to label the area that might be called a fragment, except that it is not detached at either end of the linear fracture A B. Fragment 2 was removed. The irregular-shaped fragment 3 was depressed at its superior angle, and caught by fragment 1. In order to be able to raise 3, the rongeur forceps was used in making a line from the trephine point to F, and then the upper fragment of 3 could easily be raised; the lower fragment was raised with more difficulty, and less successfully. Fragment 4 was raised. Fragment 5 was also raised. Fragment 6 did not seem to be depressed. Fragment 7 and 8 could not be readily raised. Through the opening made by the rongeur forceps and the removal of fragment 2, many pieces were removed from the comminuted mass situated on the right orbital plate of the frontal bone. The oval dotted line above E marks the point of the punctured wound in the scalp, already referred to, there being no injury to the skull proper at that point. The dotted line just above K marks the site of the skin-flap first made. It was afterward found necessary to make a branch cut-off from F, in order to expose fragments 5, 6, 7, and 8. A drainage-tube was brought out below A, having its exit through the skull, where fragment 2 had been situated. The dotted lines in the posterior fossa mark the area in which a subdural clot was found after death.

The method by which these lines were obtained is, so far as known, original with Dr. Coplin. The skull photographed in the drawing is a French preparation, having the internal ear dissected out, and is easily separated into pieces. It was coated over with mucilage and, while moist, black silk was used to mark the lines of fracture. This was done by the resident physicians following the lines discovered at the post-mortem. The result was then photographed, and reproduced as shown. If No. 8 black silk is used, beautiful lines can be made by this method. The vertical section of the skull occupies the line shown in the linear fracture at K, which, in the case reported, terminated at the articulation with the nasal bone, extending from this backward, as shown in the interior of the skull as far as R.

MEDICAL PROGRESS.

Operative Removal of an Enlarged and Displaced Spleen.—At a recent meeting of the New York Surgical Society, MARKOE (*Annals of Surgery*, vol. xvii, No. 5, p. 582) presented a woman, aged sixty-four years, from whom he had, seven months previously, removed an enlarged and displaced spleen. Several years before, the woman had strained herself in attempting to lift a sick child from a crib with fixed and high sides. Pain was felt low down on the right side of the abdomen, where there was also noticed a protrusion, the reduction of which was followed by relief. On the following morning the woman was seized with faintness, nausea, and trembling, although she had fainted before. From this time excessive muscular exertion or unusual position was attended with displacement of the lump and discomfort. Some time later, after a fall down stairs, the lump increased in size, and there was additional discomfort. Now there began to be increased frequency of micturition, aggravated by activity, by standing, and by walking. A feeling of pressure in the rectum was experienced, which was especially distressing when constipation existed. Digestion was greatly deranged. On one occasion the woman was seized with a severe attack of colic lasting for more than an hour and attended with marked bearing-down pains. The tumor was believed to be splenic, but there was no evidence of malaria or leukemia. After a period of restorative treatment preparatory to operation, a long incision was made in the median line, and the enlarged organ was dislodged from the pelvis and lifted into the wound. The inferior extremity lay tightly wedged in the pelvis, the anterior surface looking anteriorly and inferiorly, while the hilum was behind and somewhat above. The stomach had been dragged down with the spleen, and the gastro-splenic and suspensory ligaments were stretched into a broad, thin pedicle, in which several accessory spleniculæ were seen, in addition to the large and tortuous vessels. The greatest care was exercised to avoid undue tension upon the pedicle. The splenic artery was isolated and tied with a stout silk ligature. The pedicle was then doubly transfixed and tied with three locked ligatures, the inferior of which was tightened first. The portion included in this ligature was then cut away from the spleen, but immediately retracted, the ligature becoming detached, and a momentary sharp venous hemorrhage resulting, which was, however, immediately and efficiently controlled by the application of a large clamp. The remaining portion of the pedicle was grasped with two similar clamps and the spleen was cut away. The two remaining ligatures were then tightened and the clamps cautiously removed. To guard still further against slipping, the pedicle was additionally transfixed at its center and all was included in a ligature of strong silk. An accessory spleen as large as an egg was treated in the same manner, several smaller ones being left behind. The wound was closed without irrigation or drainage. The operation occupied an hour and forty minutes. Reaction was perfect. The urine first passed after the operation contained a large number of leukocytes, but was otherwise normal; two days later it was absolutely so. Examination disclosed no change in the number or relation of the blood-cells. A month after the operation the woman was permitted to return to her home, though cautioned to wear an abdominal bandage and to rest for another month. She grew steadily stronger and better, and was entirely relieved of all symptoms. The spleen weighed a little over five pounds and a half, the accessory spleen half an ounce. Microscopic examination of sections of the organ disclosed no pathologic change beyond some relative increase in the amount of connective tissue.

Tumor of the Pituitary Body.—WADDELL (*Lancet*, No. 3634, p. 921) has reported the case of a man, thirty-nine years old, who for two years had observed progressive impairment of vision, which was found to be due to partial bi-temporal hemianopsia. Both eyes were rather prominent; the pupils were equal and reactive to light; neither fundus presented any characteristic abnormality; the functions of the external ocular muscles were preserved. A diagnosis of tumor of the pituitary body was arrived at, although there was no history of syphilitic infection and no indication of akromegaly. In the past there had been but occasional headache. The reflexes were unaltered. The first indication of serious activity of the supposed tumor was the occurrence of intense frontal headache, with great prostration and a rapid short pulse. The axillary temperature was 103°; the tongue was heavily coated; there were nausea and vomiting; the face was flushed, the eyes full and injected; the patient was drowsy, but unable to sleep. These acute symptoms gradually subsided in the course of two or three days. Subsequently, slight attacks of frontal pain occurred at intervals, and the man was only with difficulty roused to any activity. He would remain for a long time in a quiet, absent-minded condition, from which he would occasionally start and ask some unimportant question, which he would repeat a short time afterward. He could clearly recall events that had occurred many years before, but not recent events. Later on, the right pupil became dilated and reacted to light, but imperfectly. The reflexes became diminished. The urine presented no abnormality. The frontal headache, previously variable, now recurred periodically about every two weeks. These exacerbations were always preceded by more than usual depression of mind, which was followed in a few hours by quickening of the pulse, a steady rise of temperature, and increasing frontal pain. The face and eyes were invariably suffused, and the bodily prostration and drowsiness were intense. The paroxysms generally lasted from twenty-four to thirty-six hours, and gradually subsided, each succeeding one leaving the man weaker than before. In one of these attacks right hemiplegia appeared, with partial loss of consciousness, increased frequency of pulse, elevation of temperature, double strabismus, and dilatation of the left pupil (as well as of the right). Consciousness began to return in a few hours, the temperature and the frequency of the pulse diminishing; the paralysis gradually passed off, and in twenty-four hours no trace of it was left. Total aphasia existed for about thirty-six hours after the return of consciousness. The patient, however, never entirely rallied, and recurring attacks of pain in the head, defective assimilation, and the formation of bedsores brought about a fatal termination from asthenia. When the skull-cap was removed the brain presented a somewhat

shrunken appearance. On removing the brain a firm, consistent, reddish-brown, oblong tumor, an inch long and less than three-quarters of an inch wide, involving the anterior lobe of the pituitary body, was found. Lying immediately to the left was a collection of fluid venous blood, retained in the form of a clot by a fold of membrane. The tumor pressed about equally on the two optic nerves.

For the Formation of an Artificial Sphincter after Extirpation of the Rectum, WILLEMS (*Centralbl. für Chirurgie*, 1893, No. 19, p. 401) recommends the following procedure: After the lower segment of the rectum, with the sphincter ani, has been removed through a perineal incision the patient is placed in the lithotomy position. If a large portion of bowel has not been removed the distal portion can be readily reached and drawn down. An oblique incision is now made over the tuber ischii, about two inches long, and extending upward and outward, in the course of the fibers of the gluteus maximus muscle. The muscle-bundles are separated with a blunt instrument, about a half-inch from the lower margin of the muscle. The bowel is drawn through this opening and attached to the external skin. If a large portion of the rectum has been removed, the sphincter must be established higher up. The patient is placed in the lateral position and an incision is made through skin, connective tissue, and aponeurosis, extending from the uninjured, right margin of the sternum downward and outward. The muscle is separated in the manner already described (the tuberoso-sacral and the spinoso-sacral ligaments will also have to be divided), and the bowel is attached to the skin. After the artificial anus has been established the wound can be drained and packed.

THERAPEUTIC NOTES.

The Treatment of Suppurating Buboes.—OTIS (*Journal of Cutaneous and Genito-urinary Diseases*, vol. xi, No. 128, p. 174) reports the treatment of 16 cases of suppurating bubo by means of injections of a mixture of iodoform and vaselin. Of this number, 9 were cured in six days, 3 in twelve days, 1 in fourteen days, 1 in twenty-three days, and 2 failed to report. The skin for some eight or ten inches about the affected area having been rendered thoroughly aseptic by scrubbing with green soap, washing with sulphuric ether, and douching with a 1 : 1000 solution of mercuric chlorid, a narrow bistoury was introduced into the abscess-cavity, and the contents gently, yet thoroughly expressed. The cavity was irrigated with a 1 : 1000 solution of mercuric chlorid, and immediately filled, by means of an ordinary cone-pointed glass syringe, to moderate distention with warm iodoform-ointment, the degree of heat not being sufficient to liberate free iodin. The plunger of the syringe being removed, the barrel was gently heated in the flame of an alcohol-lamp, filled with the ointment by means of a spatula, and the plunger replaced. On finishing the injection and withdrawing the syringe, a cold compress wet with cold mercuric chlorid solution was applied. The ointment was at once solidified at the orifice of the cavity, so that the contents could not escape. A large compress of dry mercurial gauze was applied, covered with a protective dressing of cotton, and retained by means of a firm spica. If at the end of four days all had gone well the dressing was reapplied, but if there was any evidence of inflammatory action the wound was thoroughly irrigated and cleansed, and the injection repeated.

The Epidermatic Employment of Guaiacol.—SCIOLLA (*Rif. Med.*, No. 7; *Wiener med. Pr.*, No. 19) has found that topical applications of guaiacol to the skin have the property of reducing high temperatures, not only in cases of pulmonary tuberculosis, but also in other febrile conditions. The influence is observed soon after the application has been made, and is the more energetic if the surface treated be covered with some impermeable material. Fifteen minutes after the application the characteristic taste of guaiacol can be perceived; then the temperature begins to fall, and more or less profuse perspiration takes place. The temperature frequently falls to the normal in the course of a few hours. There are no unpleasant complications, such as cyanosis, coma, and the like; on the contrary, the antithermic effect is attended with agreeable subjective sensations. Guaiacol thus applied to the skin is excreted by the kidneys as guaiacol-ether sulphate, which first makes its appearance in about an hour after its application and reaches its maximum elimination in five or six hours. The application may be made several times daily. The largest amount used in twenty-four hours was a little less than an ounce. A similar line of observations with creasote had to be abandoned on account of the caustic effect of the applications.

Menthol for Pruriginous Conditions.—COLOMBINI (*Giorn. Ital. d. Mal. Vener.; Wiener med. Pr.*, No. 19) has obtained excellent results from the employment of preparations of menthol (from 5 to 10 per cent. in alcohol, from 1 to 6 per cent. in oil, from 2 to 6 per cent. in powder) in the treatment of pruritus from whatever cause, but especially in those cases in which the scratching of the skin was responsible for the cutaneous affection, and particularly in cases of urticaria, in some forms of eczema, and in the pruritus of scabies. Preparations applied to excoriated surfaces or to mucous membranes should not be too concentrated, else they will cause burning; nor should too extensive surfaces be treated at once, as the sensation of cold produced may become disagreeable. In cases in which the itching is but a symptom, the primary disease will require special treatment. In such cases menthol can only bring about amelioration, and the pruritus will not entirely disappear until the causative disease has been cured.

The Treatment of Acute Nephritis with Methylene-blue.—Governed by the view that acute nephritis is of microbic origin, and by the knowledge that methylene-blue will inhibit bacterial development, NETSCHAJEFF (*Berliner klin. Wochenschr.*, 1883, No. 20, p. 470) employed this drug in the treatment of fifteen cases of acute nephritis, with excellent results. Tablets of a grain and a half were given thrice daily on alternate days. The urine was discolored in the course of an hour, and on the following day its volume was augmented. Albumin and tube-casts gradually disappeared. There were no unpleasant secondary manifestations.

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MENINGITIS SEROSA.

MOST practising physicians have experienced the great difficulty in cases of meningitis of deciding as to the precise nature of the disease, and more particularly as to the exact character of the effusion. The serous form of meningitis has been so well discussed in a recent paper by H. QUINCKE, of Kiel ("Ueber Meningitis Serosa," *Sammlung klinische Vorträge*, March, 1893, N. F., No. 67), that we have deemed it worth while to present a brief summary of this, together with some general remarks upon the differential diagnosis of the different varieties of meningeal exudation.

QUINCKE distinguishes serous meningitis from hydrocephalus on the one hand, and purulent inflammation of the meninges on the other hand. He believes that the watery effusions into the meninges and into the ventricles are of inflammatory origin, and describes some fourteen cases that have come under his notice. The cases are divided into (*a*) those beginning acutely and (*b*) those beginning slowly; the former being further subdivided into (1) those running an acute course and (2) those that pursue a chronic course. The chronic cases in turn are subdivided into (1) those of a progressive course and (2) those that are attended with acute exacerbations.

It has long been known that in diseases within the skull more than in those in any other situation in the body, it is the extent of the disease-process rather than its anatomic character that is of significance as to the severity and course of the affection. This holds good for tumors as well as for collections of pus and blood, and in a more striking way for the relatively indifferent serous fluids within the cranial cavity, which, though situated in most indifferent regions and without the production of focal symptoms, may cause death. The actual size, however, of an exudate that may lead to a fatal termination is subject to individual variations. As the actual harm done is due to the pressure of the fluid on the brain-substance, in every case three factors necessarily come into consideration: (1) the amount of the exudate, (2) the rapidity with which it is poured out, and (3) the relation of the size of the brain to that of the containing cranium.

Thus it is often difficult at the post-mortem examination to judge of the pathologic significance of watery exudates within the skull, whether in the ventricles or in the sub arachnoid species. Of course, edema of the brain-substance is always a pathologic condition. The amount of fluid found in the cavities, even in health, represents only the space within the skull not occupied by brain-substance; and in old age, in the diffuse or partial atrophies of the brain, and under various other conditions, the amount of cerebro-spinal fluid may be considerably increased without any evidence of abnormal intracranial pressure.[1]

Very often, at autopsy, a fresh exudate can be distinguished from such a *hydrops ex vacuo* only by the tension of the membranes and the flattening of the convolutions; but after death, even in cases in which pressure-symptoms during life have been marked, it is not always easy to make out these signs, as the *turgor* may, like serous exudations in other parts of the body, disappear after death. Again, primary exudates within the ventricles, which have come on slowly and have lasted a long time, may cause few symptoms pointing to an increase in pressure, as the brain-substance adapts itself to new relations more readily than might be supposed.

These are among the difficulties that have made

[1] Numerous observers have tried to lay down a standard of intra-cranial pressure to be regarded as normal; thus, Bischoff places it at between 41 and 103 g., while Quincke says that any pressure over 50 g. is to be regarded as pathologic.

the whole subject of hydrocephalus so obscure, and although we are able to enumerate the different modes of origin of hydrocephalus, and perhaps to explain the general pathology of the affection, yet it is still impossible to make a classification that will suit all cases.

The number of cases in the literature that can fairly be regarded as instances of serous meningitis is comparatively small, though the examples of BAGINSKI and STEFFEN of meningitis ventricularis, the acute lepto-meningitis in children of HUGUENIN, and the serous meningitis of EICHHORST may properly be classed under this heading. OPPENHEIM, PLEHN, and SOCIN have also recorded cases. It is probable that the disease is not nearly so infrequent as the literature would lead us to suppose, as in many cases in which there has been no autopsy there is little doubt but that acute serous meningitis has often been diagnosticated as purulent meningitis, and the chronic forms of the affection have been added to the list of brain-tumors. Even when autopsies are made, insufficient attention is frequently paid to the amount of exudate present.

The clinical picture of the acute form varies considerably. The disease may be as sudden in onset as purulent meningitis, but it is generally slower in course and simulates rather tuberculous meningitis. QUINCKE emphasizes the absence of fever, and says that when this is present it is only slight in degree, does not last long, and shows many irregularities in its course. Pain in the head and retraction of the neck are usually present, but vary in intensity, and are not such prominent symptoms as in the purulent or tuberculous forms. Mental disturbances appear later, and are less marked than in meningitis purulenta. If they continue long they render the prognosis grave. Delirium, sleeplessness, hyperesthesia, pain in the joints, and local paralyses may occur. Spasms in extensive muscle-areas, often epileptiform in character, are not infrequent. Vomiting occurs often; the pulse may be slow and irregular; the pupils are frequently unequal, but, as a rule, present no marked changes. Choked disc seems to be very frequently demonstrable, and QUINCKE holds that this sign is almost constant. In cases of recovery it may disappear, but occasionally it leads to atrophy and amblyopia. The irregularity of the symptoms is often more marked than in the ordinary forms of meningitis, and the clinical picture varies greatly from day to day, or even from hour to hour.

In the more insidious cases, and in those that run a chronic course, sometimes continuously progressive, sometimes with intermissions and exacerbations, the symptoms resemble very closely indeed those of brain-tumor.

The disease is chiefly one of children and of young adults, and, as a general rule, the younger the patient the greater the tendency to chronicity, with acute exacerbations. Injuries to the head, excessive mental effort, acute and chronic alcoholism, and the acute febrile diseases have been mentioned as the main causes. In chronic cases pregnancy is often responsible for exacerbations. According to QUINCKE, bacterial infection does not play a part in the etiology of serous meningitis.

To understand clearly the pathology and pathogenesis of meningeal affections, it is necessary to recall some of the facts of the physiology of the central nervous system and its meninges. It will be remembered that, normally, the cerebro-spinal fluid in the ventricles, as well as in the sub-arachnoid spaces of the brain and cord, is a secretion that flows off, mixing with the lymph through the arachnoidal villi (Pacchionian bodies), and through the tissue-network at the points of exit of the nerves. The experiments that have been made with cinnabar show that resorption is greater in the meninges of the brain than in those of the cord, and these, along with the experiments of FALKENHEIM and NAUNYN, have proved that absorption takes place chiefly by means of the Pacchionian bodies. Normally, of course, there must be a certain definite relation between the amount of secretion and the rate of absorption, and between the secretion into the ventricles and that which is poured out in the sub-arachnoid spaces. Excluding *hydrops ex vacuo*, which we have already mentioned, the general conditions that give rise to a pathologic increase in the amount of cerebro-spinal fluid are much like those that account for the accumulation of fluid in the pleural or peritoneal cavities, that is to say, lymphstasis, blood-stasis, and inflammation.

QUINCKE distinguishes meningitis corticalis sharply from meningitis ventricularis, and says that in the former the fluid has a tendency to be turbid and the disease to be parasitic in origin, while in the latter the fluid is clear and the disease is very rarely due to infection. He compares the intra-ventricular form with intermittent joint-effusions, with urticaria, and especially with acute angio-neurotic edema. He thinks that the affection is more com-

mon in children, because in them the vascular walls are much more likely to undergo changes that render them permeable, and also because an exudate into the brain of a child is more frequently followed by serious symptoms, as it offers less resistance than that of an adult.

In many cases of serous meningitis cure is effected through cessation of the exudation or through a compensatory process, partial or complete, by means of which the efferent channels are widened. Even when a high degree of pressure has lasted for a long time and has led to continuous dilatation of the ventricles, there may yet at a later time be a return to the normal pressure; and in children the dilatation of the ventricles may disappear with increasing years. In those cases in which the compensation is incomplete, even though only apparently trivial symptoms remain, there is always danger of sudden death from an acute exacerbation.

The diagnosis is perhaps that which interests the practical physician most. The acute form is likely to be mistaken for purulent meningitis, but the absence of fever or the presence of but a slight degree of fever, the slower course, the more variable symptomatology and the choked disc in the former, as a rule, enable us to make the distinction. The more subacute forms resemble closely tuberculous meningitis. Both diseases are insidious in onset and often remittent, but the absence of tuberculous disease in other organs, the normal temperature, and the general course are in favor of meningitis serosa. It is to be remembered, however, that in individuals with tuberculosis there may be a complicating serous meningitis. The diagnosis of chronic cases is still more difficult. These can be distinguished from brain-tumor only rarely *intra vitam*. Serous meningitis may give rise to focal symptoms, paralyses, convulsions, and localized pains in the head. Choked disc and blindness appear more quickly, however, than in brain-tumor. Most puzzling are those tumors of the posterior fossa of the skull that give rise to hydrocephalus from stasis. QUINCKE regards as important the application of a test that he designates lumbar puncture, in conjunction with examination of the fluid obtained. A specific gravity of 1009 with an amount of albumin of over two parts per 1000 is suggestive of hydrocephalus through blood-stasis. To distinguish the auto-intoxications (*e. g.*, acetonemia) from instances of the acute form, one will be guided by careful examination of the eyes and of the urine, and by lumbar puncture. In the very chronic and very mild cases serous meningitis may present symptoms of cerebral neurasthenia, and one cannot be positive whether he is dealing with an organic affection of the nervous system or not.

As to treatment, in the acute form anti-phlogistic measures are recommended; the application of leeches to the neck, the ice-bag, the use of intestinal derivatives, complete rest, and avoidance of excitement are advised. QUINCKE lauds highly the administration of mercurial preparations, preferably by inunction, or, if a speedy effect be desired, by hypodermatic injection. He keeps up the treatment for from four to six weeks, and has found it to be of great service in many cases. He suggests the use of pilocarpine, but has not tried it, and states that, as in other angio-neuroses, something may be expected of quinine and antipyrin during slight exacerbations. In the more chronic cases he uses flying vesicants on the skin of the head and neck, painting with iodin, and, most of all, cautious inunction with an ointment containing tartar emetic. When imminent danger is to be apprehended from the intra-cranial pressure, he would resort to lumbar puncture, removing from 5 to 80 c.c. of fluid through a hollow needle introduced at a distance of one centimeter from the middle line beneath the second, third, or fourth lumbar vertebra.

EDITORIAL COMMENTS.

Changes in the Medical Department of the Army.—Surgeon-General Sternberg, the new chief of the Medical Department of the Army, contemplates two important changes for the benefit of that service. One is the establishment of a special course of training for newly-appointed officers of the corps. This course will be given in Washington, and will constitute what will be known as the Army Medical School. It will be conducted in the Army Medical Museum and will be of four months' duration. Four of the senior medical officers stationed in the city will, in addition to their other duties, conduct this course.

The other project of General Sternberg is to give the officers of the medical corps the advantages accruing from metropolitan life. He proposes to change the system of assigning medical officers for duty as attending surgeons in the large cities. It has been the custom heretofore to detail for this purpose the older medical officers of the army. The duty usually lasts three or four years. In some cases it has lasted ten or a dozen years. The duty of the officer so detailed is to attend army officers and their families in and about the city of his location. Dr. Sternberg will hereafter detail medical officers having the rank of captain to duty as attending surgeons. The tour of duty will last only one year. By

this system the medical officer selected will be enabled to become familiar with the practice of the leading physicians and surgeons in this country and to attend medical lectures and meetings of medical societies. The experience and observation will fit them the better for their second examination, which is required by law before they can be promoted to majorities.

The Antiseptic Virtue of Iodoform.—Iodoform holds a unique position in its relation to antiseptic surgery. Although it has been demonstrated that the drug possesses no direct germicidal property, there is a general consensus of opinion that used in one form or another, as a powder, in emulsion, by inunction, it exerts an influence that may be considered antiseptic. An adequate explanation of this action is wanting, abundantly confirmed by observation though it is. In his recent address upon "The Antiseptic Management of Wounds," SIR JOSEPH LISTER adopts the view that iodoform acts by inducing chemical changes in the toxic products of bacterial activity, a plausible explanation, inasmuch as we know that the constitutional manifestations of infective processes in general are not so much dependent upon the mere presence of microörganisms as upon the development of toxins. TREVES (*Lancet*, No. 3641, p. 1375) offers a contribution to this interesting subject, in which he reports the generous application of iodoform in powder within the peritoneal cavity in the course of abdominal operations, with results that appear not entirely unrelated to the use of the drug. The special utility of iodoform applied to tuberculous tissues is well known. In our appreciation of the utility of iodoform we must, however, not ignore its toxicity, but should always exercise the greatest care in its employment.

Cholera in France.—There is, unfortunately, good ground for believing that the public is being deceived by the suppression of news as to the existence of cholera in France. It is sufficiently alarming to learn that about a thousand deaths occurred from the cholera in Mecca in one day last week. But when we are assured that the disease has travelled so far west as France, and that in one week 562 cases, with 178 deaths, occcurred in Lorient, France, it is certainly time that immigration from France should be restricted, or scrutinized with profoundest care. A sailor on a ship from Nantes, France, died of cholera at Newcastle, England, some two weeks ago, and deaths have occurred at Malta under similar circumstances The epidemic has also appeared in Catalonia, Spain. The warning is all the more needed because all information as to the condition of the West Coast and the general spread of the disease throughout France is being rigidly suppressed. This mistaken policy arouses rather than quiets apprehension in the minds of the prudent.

Pernicious Anemia and Chlorosis in the Negro.—There is no evident reason why individuals of African descent should be less susceptible than members of the Caucasian race to the diseases characterized by qualitative and quantitative changes in the constitution of the blood; but on account of the absence in dark-skinned people of the pallor of the integument usually attendant upon these conditions, and the lack of other distinctive symptoms, the blood-examination is less commonly made in colored than in white persons. It is on this account, perhaps, that reports of cases of anemia in negroes are uncommon. Musser (*University Medical Magazine*, July, 1893, p. 770) records a case of pernicious anemia and one of chlorosis in colored persons. In the one case a fatal termination ensued; in the other, recovery followed the administration of a pill of ferric sulphate and potassium carbonate according to the formula of Blaud.

Edema of the Larynx Complicating Influenza.—Previously looked upon as of itself an insignificant affection, recent experience has taught us quite the contrary of influenza, while the complicating conditions have been of the widest diversity and fraught with great fatality. Affections of the respiratory tract have been especially common. A catarrhal condition of the larynx was almost universal. In some cases ulceration occurred, and in a small number edema has developed, necessitating tracheotomy. Two cases of edema of the larynx in the course of influenza are recorded by Cartez (*Rev. de Laryngol d' Otol., et de Rhinol.*, No. 12, 1893, p. 450), both in adults, one a male, the other a female. In both leeches and ice were applied over the larynx, and recovery ensued. In the second there was a history of previous syphilitic infection, with laryngeal manifestations, which, it is thought, acted as a predisposing cause.

REVIEWS.

GEOGRAPHICAL PATHOLOGY: AN INQUIRY INTO THE GEOGRAPHICAL DISTRIBUTION OF INFECTIVE AND CLIMATIC DISEASES. By ANDREW DAVIDSON, M.D., F.R.C.P. Ed., Late Visiting and Superintending Surgeon, Civil Hospital, and Professor of Chemistry, Royal College, Mauritius. 2 vols., 8vo, pp. 1005. New York: D. Appleton & Co., 1892.

IN this work the author has aimed to sketch the geographic distribution of infective and climatic diseases, and to trace the influence of temperature, rainfall, altitude, and soil-conditions on their prevalence, character and epidemic spread. Organic diseases of the heart, kidneys, and nervous system, which are not, as a rule, caused by infection and are not materially influenced by soil and climate, are not regarded as properly within the scope of the book, and are only occasionally mentioned. Endemic malarial fevers in various malarial countries are extensively considered, and very instructive charts, illustrating the characters which they assume in different countries, have been introduced. Typhoid fever, cholera, yellow fever, and influenza receive especial attention, and notes of other diseases of the class embraced by the author, usually proportionate to their local importance, supplement the former.

The author has considered his subject under four great geographic groups—namely, Europe, Asia, Africa, and America, with a convenient order of subdivision. For example, Europe is considered by three latitudinal divisions in twenty chapters. Each chapter of the book begins with a concise geographic description of the country in question, followed by remarks on climatology, including such points as mean monthly rainfall and temperature, a short section on vital statistics, and a more or less lengthy one on pathology. Chapter I,

which treats of Iceland and the Faröe Islands, fairly illustrates the comprehensiveness and the importance of the data collected, analyzed, and recorded in this book. Under the section of pathology, in this chapter, we have paragraphs on malaria, enteric fever, typhus fever, relapsing fever, diphtheria, croup, Asiatic cholera, dysentery, diarrhea, influenza, whooping-cough, smallpox, measles, scarlet fever, pneumonia, epidemic pneumonia, hepatitis, hydatids of the liver, diseases of the spleen, trismus neonatorum, carcinoma, rheumatic affections, scrofula, syphilis, leprosy. The special information to be gleaned from these paragraphs is that leprosy, formerly widely diffused in Iceland, is now rapidly dying out; syphilis is excessively rare, and of a mild type; pulmonary tuberculosis is seldom met with in natives; whilst measles has appeared only four times in the history of Iceland. Scarlet fever occurs only at rare intervals, and none of the eruptive fevers is endemic in the island; neither is whooping-cough endemic, nor does it show a tendency to spread, even when introduced into the country. Although there are numerous marshes among the inhabited districts, paroxysmal fevers are not endemic, and while diarrheas are comparatively rare, enteric fever is endemic, and often assumes an epidemic form; relapsing fever has never been seen, and epidemic, cerebro-spinal meningitis has been encountered only once.

While usually any one of the diseases enumerated is dismissed in a single paragraph, influenza fills something over two pages. Although the author declines to undertake to settle the dispute as to whether *influenza arctica*, so frequent in the Arctics, is a specific affection, closely allied to the epidemic disease, or should be regarded as a simple catarrh, arising from the climatic conditions peculiar to cold regions, the facts which he prefers to speak for him appear to indicate very strongly the contagious and transportable nature of epidemic influenza.

Thus, according to our author, "Influenza has often been observed to make its appearance immediately after the arrival of a foreign vessel, although the passengers and crew of such vessel may not have been suffering from the disease, and although influenza may not have been raging in the port or country from which it sailed.

"The outbreak of influenza in Iceland on the arrival of foreign vessels can only be explained on the assumption that the specific cause of the disease is transportable, but it does not follow that commercial intercourse is the only means by which this malady is diffused.

"Another remarkable circumstance in connection with the outbreaks of influenza in Iceland is the immunity from the disease enjoyed by strangers and recent arrivals, while very few of the natives escape."

It is impossible, in the short space allowable, to give any adequate review of this great work. We have quoted from the first chapter because it is short and fairly representative. These two volumes are replete from the first to the last chapter with a great mass of well-analyzed and condensed information of a trustworthy character, so desirable for the comprehensive and philosophic study of epidemic and infective diseases as they may be influenced by general climatic and telluric conditions, and yet usually so difficult and so laborious of acquisition. The great value of these two volumes is further enhanced by a very full table of contents and by a very complete cross-index.

On the whole, we believe that the aim of the author has been attained in a manner that will prove highly satisfactory to those who shall have occasion to consult these encyclopedic volumes, which, in our opinion, should be ranked with the very similar works of Hirsch and of Lambord.

In conclusion, we would most highly commend the judgment of the publishers in determining that such a valuable contribution to geographic pathology should issue from their press. The typographic excellence of this work is fully up to the high standard of these publishers.

ELEMENTS OF HUMAN PHYSIOLOGY. By ERNEST H. STARLING, M.D. Lond., M.R.C.P., Joint Lecturer on Physiology at Guy's Hospital, London, etc. With 100 illustrations. 12mo, pp. 437. Philadelphia: P. Blakiston, Son & Co., 1892.

THE importance of the branch of physiology in the curriculum of medical education cannot be overestimated, and need not here be dwelt upon. Suffice it to say, that a full and correct understanding of the subject is essential for successful practice in any department of medicine. He who lacks knowledge of structure and function can only be incompetent to treat their derangement. Books on physiology are not wanting. Of these we have numerous good ones, both in Continental languages and in English. The little volume before us may be assured a cordial welcome. It is characterized by accuracy of statement, and deals with its subject in a clear and easy style that is calculated to excite interest and hold attention. While the various subjects are discussed in a terse, concise manner, their usefulness has not been annihilated by the painful compression and abbreviation so common in elementary books of the day. The arrangement conforms to the usual one. Recent developments receive appropriate notice. The index is full. The mechanical details meet the requirements. The book is to be heartily recommended to those who wish to lay a strong groundwork in physiology.

DISEASES OF THE LUNGS, LIVER, AND KIDNEYS. By N. S. DAVIS, JR., A.M., M.D., Professor of the Principles and Practice of Medicine, Chicago Medical College, etc. No. 14 in the Physicians' and Students' Ready Reference Series. 8vo, pp. vii, 359. Philadelphia and London: The F. A. Davis Co., 1892.

WONDER must often arise as to what becomes of all the medical books published. Many can have but a limited circulation, and many more can attract but passing attention. We have before us a well-conceived and a well-written little volume, dedicated only to a consideration of the diseases of the lungs, heart, and kidneys, the *motif* for which, however, we must confess we scarcely appreciate. Just why only these three subjects should be considered together is not entirely clear, unless it be in response to an increasing tendency to specialism. There is no claim to originality, and in truth it can be said that the book contains little or nothing original. The subject-matter presented can, moreover, be found at least equally as well presented in

any of the recognized text-books on the practice of medicine. As already indicated, the several subjects are well and fairly fully considered. We fail, however, to find any reference to fibrinous bronchitis, to hydatids, sarcoma and tuberculosis of the kidney, and to floating kidney. The subjects of malformations and displacements generally seem completely ignored.

DISEASES OF THE SKIN, by CHARLES C. RANSOM, M.D., Assistant Dermatologist, Vanderbilt Clinic, New York. (THE STUDENTS' QUIZ SERIES. Edited by BERN B. GALLAUDET, M.D., Demonstrator of Anatomy and Clinical Lecturer on Surgery, College of Physicians and Surgeons, New York. Volume 8.) Pocket size, 12mo., 192 pages, 28 illustrations. Limp cloth, $1.00. Philadelphia: Lea Brothers & Co., 1893.

WE have looked over this little volume, and the thought that arises in our mind is: For what purpose was it written? Presumably to aid the student just prior to his examination at the college or hospital, but we are firmly of the opinion that all books of the character of Quiz's, or "questions and answers," fail completely to give the knowledge the student ought to have. The present book is no exception, and while the subject-matter is equal in merit to the several quiz's on this subject that have recently appeared, it offers no special attraction. The treatment is singularly neglected, and with some diseases is altogether wanting. We note that the formula of Lassar's paste is inaccurately given, while the directions for its use are different from those advised by the leading dermatologists. The nomenclature and the classification are both good, the latter being that of the American Dermatological Association.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 28.)

SECTION ON MATERIA MEDICA AND PHARMACY.

DR. FRANK WOODBURY, of Philadelphia, delivered the President's Address. The subject of his remarks was "Scientifically Prepared Remedies Essential to a Rational Therapeutics." He said that the daily use of instruments of precision in clinical medicine, and the study of pathology, make the demand an imperative one for greater precision in therapeutic methods. Haphazard prescribing and vulgar empiricism must yield to scientific pharmacology and rational therapeutics; these, however, depend not only upon accuracy of dosage of skilfully selected remedies, but also upon uniformity in the composition and physiologic activity of such remedial agents. The standardization of pharmaceutic preparations is as important to the physician as is the uniform composition of test-solutions to the chemist. Accuracy of dosage requires that the amount, or proportion, of active principles of any given remedy shall be uniform, in order to properly gauge its effects.

The modern physician is free from the dictum of any school in the choice or application of remedies. The ancient, assumed laws of cure have been outgrown, and it is impossible that they shall ever again be considered of sufficient importance to divide physicians into sects or schools of practice. It is true that names survive the things and circumstances that called them into being; and if some sectarian physicians may, for reasons best known to themselves, profess to represent certain schools, it is well known that they use the same text-books, read the same medical journals, get their medicines from the same sources, as others. Honest medical sectarianism could scarcely survive the revelations of modern biologic science, that all diseased processes are merely normal functions under abnormal conditions; and that such conditions are physical and natural and not spiritual or supernatural. Independence of the voice of authority other than that of trained experience and freedom to reasonably apply any scientific fact to the alleviation of human suffering, are the boasts of modern medicine and the criterion of the scientific physician. There can be only one best way to treat a patient suffering with any given disease, and it is the aim of scientific medicine to discover and apply that method, without reference to any hypothetic law of cure.

The hypodermatic tablet illustrates the scientific feature of precision of dosage in its most perfect form, while the ordinary soluble tablets have not only accuracy of administration, but convenience and cheapness in their favor. It cannot be denied that this new departure in pharmacy is working adversely to the interests of the retail pharmacist and, in the end, will not prove favorable to the physician, because it encourages him to dispense his own prescriptions and almost inevitably drives him into routine practice. It is attended by the practical disadvantage, which the physician should seriously consider, of depriving him of any documentary evidence, or, indeed, any evidence beyond his own testimony, as to the identity or character of the remedy administered, in case of a suit for homicide by misadventure, or for damages for malpractice when it is claimed that a wrong medicine has been administered. The written prescription is a safeguard, in such a case, that the physician would be glad to possess.

The mutual benefits derived from the separation of pharmacy from the practice of medicine were briefly mentioned. Physicians and pharmacists were urged to become better acquainted with each other, so as to increase respect and avoid misunderstanding.

The interests of the scientific pharmacist and the scientific physician do not conflict, but supplement each other.

PROF. J. M. GOOD, of St. Louis, Mo., read a paper entitled "Shall the Practice of Medicine and the Practice of Pharmacy continue Distinct and Separate?" and DR. L. CH. BOISLINIERE, of St. Louis, Mo., read one entitled "The Physician and Pharmacist." The position taken in each was that pharmacists, as a class, are careful, painstaking, and well qualified to stand between the prescriber and the patient, or *vice versa;* and occasions may arise when they are of great utility in this position.

At the second session, PROF. C. LEWIS DIEHL read a communication on the "National Formulary" of the American Pharmaceutical Association, which physicians would find very valuable if they were more familiar with its contents. The reliability of the formulas has been re-

cently tested by a Committee on Revision, which will defer its final report until after the appearance of the new U. S. Pharmacopeia. A preliminary report, however, was made to the American Pharmaceutical Association in which the reliability of the formulas was indorsed, with few exceptions of no importance. The physicians of the American Medical Association are earnestly asked to give this Formulary their favorable consideration, and the Association is urged to take such action as may be conducive to the adoption and use of the National Formulary by practising physicians throughout the land.

PROF. EDGAR L. PATCH, of Boston, Massachusetts, contributed an interesting paper entitled "A Few Incompatibles often Overlooked by the Physician, and some Prescription Controversies." The prescriptions were in *fac-simile*, and might readily give rise to controversy as to their exact reading, owing to careless chirography, actual mistakes and omissions, and abbreviations. The necessity of a written prescription in place of a verbal one was pointed out, and it was insisted that it should be written in good Latin, to prevent mistake and to assist in carrying out the intention of the physician. Many of the conditions affecting the therapeutic effect or physical appearance of preparations may be overcome by greater care in selecting drugs and by specifying exactly what preparation is desired by the physician.

The prescription may disappoint from a number of reasons: 1. Because the patient does not follow directions; 2. Because drugs cannot benefit the case; 3. Because the dosage is incorrect; 4. Because a wrong remedy is selected; 5. Because the remedy is deficient in strength or is over-active; or 6. Because the vices or habits of the patient neutralize or abort treatment.

PROF. J. M. GOOD made a verbal communication on "Some Additional Incompatibles in Prescribing."

PROF. FRANK RYAN, of Philadelphia, read a paper on "Cocillana," which is the bark of an undetermined species of Guarea.

The chief therapeutic value of this drug is in diseases of the respiratory tract, especially bronchitis in its subacute or chronic stage. It is a stimulating expectorant, free from nauseating or depressing effect. The dose of the tincture is from thirty minims to two fluidrams; of the fluid extract, from five to twenty minims. It has an aromatic odor and bitter taste; and in the form of fluid extract may, with advantage, be combined with syrup.

DR. F. E. STEWART read a paper, by title, "The Waters of the Glen Springs, Watkins Glen, New York."

A paper on "The Treatment of Chlorotic Anemia," by Dr. RALPH STOCKMAN, of Edinburgh, was also read by title.

A discussion upon the United States Pharmacopeia was opened by PROF. C. LEWIS DIEHL, of the Committee on Revision. He announced that the new Pharmacopeia would be issued early in the autumn, as it is rapidly approaching completion. No radical departure from the preceding revision is contemplated, but the metric system has been adopted and is employed exclusively in the various formulæ in place of parts by weight. In the directions for making fluid extracts parts by volume will be substituted for the sake of uniformity. There will be introduced a number of new drugs and preparations, including several elixirs.

In addition to methods for standardizing opium and cinchona, there will be given methods for standardizing preparations of these drugs and also those of nux vomica.

PROF. ALBERT B. PRESCOTT expressed great confidence in the value of the revision and commended it to the attention of the physicians of the United States as a book of habitual reference. It is the code of utility, and its observance belongs in a true sense to the Code of Ethics. If the "Codex Medicamentarius" were to receive, in the medical press, some share of the attention that has been devoted to the ethical code, medical literature might gain in point of practical benefit, possibly in scientific purpose. Moreover, the Pharmacopeia is a work for professional unification; it brings together not only the pursuits of medicine and pharmacy, but the researches of biology, chemistry, and hygiene.

On motion of PROF. DIEHL, the following resolution was adopted and directed to be laid before the General Association for approval:

Resolved, That the Section on Materia Medica and Pharmacy of the American Medical Association respectfully recommends that the next edition of the Pharmacopeia, soon to be issued, be at once adopted by physicians in prescribing and pharmacists in compounding. It also advises the general adoption by physicians and pharmacists of the *National Formulary* issued by the American Pharmaceutical Association, and that the teaching medical and pharmaceutic colleges adopt these works as text-books.

The following resolutions were presented by PROF. RYAN and adopted:

WHEREAS, It appears to be a growing practice for some physicians to dispense their own medicines; therefore,

Resolved, That it is the opinion of this Section that the practice referred to, except in case of emergency, is not conducive to the better interests of the practice of medicine, nor is the welfare of the patient best served by this means of medication.

Resolved, That the Section on Materia Medica and Pharmacy of the American Medical Association wishes to discourage the practice, and asks its members to use their influence to that end.

The following resolution was offered and adopted, with a view of exciting greater interest among physicians and making the future meetings of the Section more valuable:

Resolved, That, at the future annual meetings of the Section on Materia Medica and Pharmacy, special efforts shall be made to have a scientific exhibition of new remedies and of such drugs and pharmaceutic preparations as will be of an educational character, such preparations to be strictly in accordance with the Code of Ethics and to be accompanied by such lectures or descriptive papers as shall enhance the value of the proceedings and lead to instructive discussion; the same to be approved by the local Committee of Arrangements of the American Medical Association.

The officers of the Section were reëlected unanimously.

NEWS ITEMS.

A Standing Committee on Cholera.—The following circular has been issued by the College of Physicians of Philadelphia:

PHILADELPHIA, June 20, 1893.

The Standing Committee on Cholera of the College of Physicians earnestly desires to secure the organized co-operation of the physicians of Philadelphia in the efforts, in which the whole country is interested, to prevent the appearance of cholera among us in the coming summer.

A general plan has been adopted by which physicians in Philadelphia can coöperate with this Committee—and through them with the Board of Health and the other city authorities—in improving the sanitation of the city in every respect.

Physicians in each ward from the number of those volunteering for this public service will be asked to observe especially—as they may readily do in their daily rounds—the condition of the streets, alleys, sewers, and gutters, and to report to this Committee upon the performance and thoroughness of the work of the street-cleaning contractors, etc. It is also desired that they should observe, as far as possible, the sanitary condition of dwellings, especially noting nuisances which need to be immediately remedied. If cholera spread rapidly in Europe they should ascertain so far as they may be able whether there have been any recent arrivals of immigrants likely to have come from or to have passed through infected places.

Reports should be immediate, explicit, and concise. Necessary blanks for the purpose will be supplied by the Committee.

If cholera should appear in Philadelphia or in any neighboring city, further organization will, of course, be necessary. Ambulance-corps and nurse-corps will then be organized by the Committee, as well as a corps for disinfection service. Under such circumstances it will become necessary to report at once to this Committee, as well as to the Board of Health, every case of acute diarrheal disease as a "suspect."

The Committee, in accordance with the instructions of the College, waited upon the Mayor and city authorities and offered their services, both advisory and executive. They are glad to be able to state that this offer was well received by the City Government, which approved of the plan outlined in this circular, and that the Committee was urged to report upon all matters of sanitation, paving, or general cleanliness in which changes may be desirable. The municipal authorities have promised that criticisms of these matters on the part of the Committee will receive the most careful and prompt attention.

Physicians willing to coöperate with the Committee in this important matter are requested to at once forward their names and addresses to the Secretary.

(Signed) E. O. SHAKESPEARE, M.D., *Chairman.*
J. M. DACOSTA, M.D.,
H. C. WOOD, M.D.,
J. C. WILSON, M.D.,
F. P. HENRY, M.D.,
J. H. MUSSER, M.D.,
J. K. MITCHELL, M.D., *Secretary,*
211 S SEVENTEENTH ST.

Death of James McCann, M.D., LL.D.—Dr. McCann was born in 1836, in Penn Township, Allegheny County, Pa. He began the study of medicine in 1858 and graduated from the Medical Department of the University of Pennsylvania in 1863 and immediately entered the medical service of the army as assistant-surgeon of the Fifth Pennsylvania Volunteers. He continued in this service until the close of the war, when he returned to Pittsburg and began the practice of medicine with Dr. W. C. Reiter. Two years later he received the appointment of surgeon to the Marine Hospital, and the connection with Dr. Reiter was soon afterward dissolved.

For twenty years he was one of the surgeons of the Pennsylvania, the Allegheny Valley, and other railroads.

He was an active and influential member of the Pittsburg Free Dispensary from its inception, of the Board of Health for many years, of the Allegheny County Medical Society, of the State Medical Society, of the American Medical Association, of the American Surgical Association, and of the American Association of Obstetricians and Gynecologists; but, owing to ill health, he was never able to attend a session of the last.

He organized the first medical college in Western Pennsylvania, in which, in September, 1886, he was elected to the chair of Professor of the Principles and Practice of Surgery, which position, notwithstanding his failing health, and in defiance of bodily suffering, he filled until a few months prior to his death. He was unanimously nominated for appointment as "Emeritus Professor," but he died, June 13, 1893, before this action could be confirmed by the Board of Trustees of the University.

Louisiana State Medical Society.—At the recent meeting of the Louisiana State Medical Society Dr. A. B. Miles, of New Orleans, was elected President; Dr. D. R. Fox, Vice-President First Congressional District; Dr. Charles Chassaignac, Vice-President Second Congressional District; Dr. J. D. Hanson, Vice-President Third Congressional District; Dr. C. D. Orvens, Vice-President Fourth Congressional District; Dr. A. W. Jones, Vice-President Fifth Congressional District; Dr. J. W. Duprée, Vice-President Sixth Congressional District; Dr. P. B. McCutcheon, of New Orleans, Recording Secretary; Dr. A. G. Friedrichs, of New Orleans, Corresponding Secretary; and Dr. W. E. Parker, of New Orleans, Treasurer.

American Association of Genito-Urinary Surgeons.—At the meeting of the American Association of Genito-Urinary Surgeons, held at Harrogate, Tenn., June 20 and 21, 1893, the following officers were elected for the ensuing year: President, Dr. George Chismore, of San Francisco; Vice-President, Dr. L. Bolton Bangs, of New York; Secretary and Treasurer, Dr. John A. Fordyce, of New York; Member of the Council-at-Large, Dr. R. W. Taylor, of New York.

Professor Peter, a well known French clinician of Paris, and a former pupil of Trousseau, died at Paris, on June 9th, of cerebral hemorrhage; he was sixty-eight years old.

Dr. J. Madison Taylor has been elected Professor of Pediatrics in the Medico-Chirurgical College.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXIII. SATURDAY, JULY 15, 1893. NO. 3.

ORIGINAL ARTICLES.

PULSATING PLEURAL EFFUSION.

BY J. C. WILSON, M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE AND OF CLINICAL MEDICINE IN JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

I HAVE had the opportunity of studying three cases of pulsating pleural effusion. The first I reported to the Philadelphia County Medical Society on May 8, 1889. The report is embodied in the *Transactions* of the Society, but was not published elsewhere. As the case illustrates some unusual phases in this interesting condition, I have incorporated the report in this paper. The other cases are now published for the first time.

CASE I. *Strain in lifting; pain in the left side; pleural effusion, at first serous, subsequently purulent; extensive pulsation of the side; pyo-pneumothorax; paracentesis thoracis; free drainage, interrupted by removal of tube; tense pneumothorax; resection of ribs; recovery.*—The patient was a male, aged twenty years, unmarried, Irish, a laborer in a dye-house. He was admitted to St. Agnes's Hospital March 16, 1889. His parents were living and in good health. Three years previously the patient had an attack of chest-trouble, which continued for four weeks. Subsequently his health had been good.

About six weeks prior to admission to the hospital, in lifting a large roll of cloth, he suffered a twist of the left side. He immediately experienced severe pain, which was increased on deep breathing. There was at first no cough. After a time he began to suffer from shortness of breath and from cough, unattended by expectoration, but worse at night; he was able at all times to lie down in bed. The difficulty in breathing becoming urgent, his chest was tapped on three occasions during the nine days prior to his coming into the hospital, a large quantity of fluid being removed. This fluid, he stated, was at the first two tappings clear, but on the last occasion turbid.

Upon admission the presence of a large pleural effusion upon the left side was determined without difficulty. The cardiac impulse was felt on the right side in the nipple line, and was visible in the third and fourth intercostal spaces to the right of the sternum; there were no murmurs. There was a distinct impulse having the cardiac rhythm over the whole of the left side anteriorly and laterally as far as the line of the posterior axillary fold. This impulse, which was very distinct upon palpation, was not visible; it was not felt posteriorly.

Four days later, aspiration was performed, the needle being introduced in the eighth intercostal space slightly in advance of the line of the posterior axillary fold. About three pints of foul-smelling greenish-yellow pus were withdrawn. Threatening symptoms arising, the aspiration was discontinued.

After two days the pulsation on the left side was no longer observed to the left of the nipple line, save in a restricted area in the third intercostal space. The fluid rapidly reaccumulated and pulsation returned. By means of a trocar four pints of fetid pus were evacuated; a soft-rubber drainage-tube was introduced, and the chest dressed antiseptically. Rapid improvement in the patient's general condition immediately followed. In a week he was up and about the ward. The discharge from the tube amounted to only a few drams daily, and was no longer fetid.

After the lapse of three weeks the drainage-tube became clogged and was removed, but the resident physician was unable to replace it.

Owing to absence from the hospital, I did not again see the patient until a week later. The impulse of the heart was felt in the third and fourth intercostal spaces near the right nipple. The left chest was distinctly flattened in its antero-posterior diameter, and there was again pulsation over its antero-lateral surface, extending to the posterior axillary line and synchronous with the cardiac systole. The pulsation was most distinct in the second and third intercostal spaces to the left of the nipple line, but could be faintly perceived at the base of the chest. The percussion-sounds were tympanitic anteriorly above the level of the fourth rib and flat below. Posteriorly percussion was flat.

The dyspnea increasing and the substernal pains being more pronounced, the sixth, seventh, and eighth ribs were resected for an inch in the axillary line. Upon puncture of the pleura there was an escape of air, and the wound being enlarged to permit of an examination of the cavity, it was found free from pus. The finger could reach the compressed lung, which transmitted the cardiac impulse; and a large probe, carried into the wound and gently brought in contact with the lung, moved synchronously with the cardiac systole. After the operation the heart did not return to its normal position, but continued to beat to the right of the sternum. A large drainage-tube was introduced. Suppuration was reëstablished and a small amount of pus continued to discharge by way of the drainage-tube. Distinct pulsation persisted over the upper part of the chest outside the mammillary line. The patient did well, and after a time left the hospital and was lost sight of.

The sequence of events in the foregoing case appears to have been the following: Strain in lifting,

causing laceration of the pulmonary pleura (whether pleural adhesions, set up during the sickness three years before, had any part in determining such a lesion or not cannot be decided); pneumothorax, followed by serous effusion; aspiration in the fourth week, twice repeated at short intervals; pyo-pneumothorax, with firm compression of the lung, the lower lobe of which was completely airless, and probably adherent to the pericardium; slight expansion of the upper lobe after aspiration; heart dislocated and retained in its new position by inflammatory adhesions; transmission of impulse from the displaced heart through the contracted left lung, at first to the fluid contents, and later to tensely confined air in the pleural cavity, with pulsation of the chest-wall. This pulsation was more distinct and more persistent opposite the second and third intercostal spaces, being probably there transmitted through the compressed lower portion of the upper lobe, which had contracted adhesions at that point.

The tension within the pleural cavity, which, shortly after the removal of the first drainage-tube, gave rise to flatness on percussion below the area of the adherent lung, is only explicable upon the hypothesis of a persistent rent in the pulmonary pleura.

Case II. *Croupous pneumonia of left side; pain in side; a month later signs of large effusion; pulsation; treatment by the method of Lewaschew, without success; free drainage; recovery.*—Samuel L., aged twenty-two years, a bookmaker, was admitted to a private room in the German Hospital, March 14, 1891. The family history was good as regards pulmonary disease. His mother had died of rheumatism; five brothers and sisters were all living and in good health. There was no history of tuberculosis in the family. Five weeks prior to admission the man had had left-sided pneumonia, accompanied at first by a great deal of pleural pain, and becoming after a time complicated with pleural effusion. The physician who attended him was unable to state at what period the signs of the effusion first appeared.

The effusion steadily augmented. The patient rapidly lost flesh and became much oppressed. On admission he was greatly emaciated, feeble, and anemic; there was constant distressing cough, with a small amount of mucoid expectoration. The temperature ranged between 99° and 100.5°; the pulse, between 116 and 128; the respirations, between 20 and 24. The tongue was coated; the patient had complete loss of appetite; the bowels were constipated. Upon examination of the chest the physical signs of a large left-sided effusion were found present. There was flatness upon percussion over the whole chest, in front and behind, except at the apex, where there was tympanitic resonance. The semi-lunar space was obliterated; the heart was displaced to the right side, the impulse being felt in the third and fourth intercostal spaces within the right mammillary line.

Upon auscultation, the heart-sounds were distinct. There were no murmurs. At the upper part of the chest on the left side, both anteriorly and posteriorly, was heard feeble bronchial respiration. Below the line of flatness this was gradually lost. The vocal fremitus and vocal resonance were greatly diminished over the region of flatness. On the right side there was puerile respiration, without râles. On the left side there was bulging of the lower intercostal spaces, together with distinct pulsation, perceptible both to the eye and to touch, synchronous with the heart's action, from the second intercostal space to the base of the chest, and extending, with gradually diminishing intensity, to the mid-axillary line, where it was lost. There was no pulsation posteriorly.

Careful examination was made for the signs of even a limited pneumothorax. Neither ordinary percussion nor the coin-test yielded the signs of such a condition. Succussion signs could not be elicited.

Aspiration was at once performed and thirteen fluidounces of light-colored pus of creamy consistence were withdrawn. The patient was much agitated and insisted upon the operation being discontinued. On the following day aspiration was repeated and eighty ounces of pus were evacuated. The pulsation thereupon disappeared and did not recur. This was followed by evidences of expansion of the lung, namely, vesicular murmur reaching as low as the angle of the scapula, with crepitant and sub-crepitant râles, vesicular resonance, friction-sounds, and egophony. The impulse of the heart could no longer be detected to the right of the sternum, but was felt at the left border of the sternum. The intercostal spaces were slightly retracted; the patient showed rapid improvement; the temperature fell; appetite returned; cough ceased. In the course of a few days, however, there were signs of reaccumulation of the effusion. It was then determined to treat the empyema by the method of Lewaschew, which consists in the removal of the pus and its replacement by sterilized normal salt-solution. This operation was repeated on several occasions at intervals of two or three days. It was not, however, attended with success, the pus always rapidly reaccumulating and tending, after a time, to become foul.

On April 16th the chest was perforated by means of a short trocar of large diameter, and through the canula a No. 18 soft catheter was introduced and allowed to remain. The drainage thus secured was efficient.

On May 12th the drainage-tube, which had been gradually shortened, was withdrawn, and at the end of May the patient left the hospital, well, with an absence of retraction of the chest-wall, which, under the circumstances, was remarkable. In a short time he resumed his profession as a gambler.

The chief interest in this case relates to the fact that neither in the history nor in the physical examination were there evidences of pneumothorax. The patient had been attended outside the hospital from the beginning of his sickness by a competent

and painstaking physician, who recognized the attack as one of pneumonia, and gave a clear history of sudden onset, with chills, high fever, and rusty sputum. At no time in the course of the attack had there been such purulent expectoration as would justify the suspicion that a bronchial fistula had been established, nor was there elicited upon painstaking search, even with the coin-test, the slightest indication of any collection of air in the pleural cavity. The case is of further interest because, immediately upon the reduction of the intra-pleural tension, after the aspiration, the pulsation disappeared, not to recur when, as was shown to be the case during the treatment by the method of Lewaschew, pneumothorax had been accidentally established, nor when, after the perforation of the chest-wall, a free pyo-pneumothorax existed.

CASE III. *Family history of tuberculosis; influenza followed by pulmonary tuberculosis; large left-sided effusion; aspiration of purulent fluid; pyo-pneumothorax; pulsation; large tuberculous cavity of right lung; death from hemoptysis.*—W. B., twenty-one years of age, a harness-maker, was admitted to the hospital of Jefferson Medical College, October 15, 1892. His father had died of blood-spitting; his mother, from the results of influenza. He had one sister, who was living and in good health. Until two years previously the patient had been well and strong. At that time he had an attack of influenza, which was followed by rapid and serious failure of health; digestion became disordered; he lost weight and strength and a troublesome cough developed. After the lapse of four months he began to suffer from afternoon fever; he became progressively weaker and emaciation was marked. He suffered also from exhausting night-sweats, and on several occasions had hemoptysis.

In July, 1892, he presented himself at the Out-patient Department of the hospital for treatment. It was then found that the left chest was full of fluid. Declining operative treatment, he discontinued attendance at the clinic. He states, however, that shortly afterward three quarts of thick pus were withdrawn from the chest by aspiration. Cough was constant and troublesome and accompanied by abundant muco-purulent expectoration. He stated that at intervals he expectorated large amounts of fetid pus.

The patient, upon admission, was extremely emaciated and anemic; cough was constant and troublesome; he suffered from hectic fever and profuse night-sweats. Upon physical examination, the signs of pneumothorax with fluid upon the left side were found present; the respiratory excursus was extremely limited; the lower intercostal spaces were obliterated. Above the level of the fourth rib the percussion was tympanitic. In this region there was amphoric respiration and a typical response to the coin-test. The succussion-splash was easily developed. Below the level of the fourth rib there was flatness, which extended two fingers' breadth below the arch of the ribs, obliterating the semi-lunar space of Traube. There were signs of a large cavity at the right apex; the heart was displaced to the right, the impulse being distinct in the fourth and fifth intercostal spaces to the right of the sternum. The heart-sounds were most distinct at mid-sternum, and were well heard to the right of the sternum; there were no murmurs.

Upon inspection, there was distinct pulsation of the chest, synchronous with the heart's action, in the third, fourth, fifth, and sixth intercostal spaces on the left side, extending to the line of the anterior axillary fold. Pulsation, though not visible elsewhere, was perceived upon palpation at the arch of the ribs on the left side.

Some days after admission, about eight ounces of fetid pus were removed by aspiration. After this the pulsation became less marked. The patient declined operative interference, and owing to his wretched condition, it was not urged.

The patient left the hospital in December. Late in January he was readmitted, and died suddenly from pulmonary hemorrhage on February 25, 1893. An autopsy was not permitted.

With the assistance of Dr. A. A. Eshner, I have collected 68 cases of pulsating pleural effusion. Dr. Eshner has made the following analysis:

Of the 68 cases, the sex is stated in 52. Of these, 41 were males; 11 females.

The age is given in 47 cases. It varied from 2 to 57 years.

The cases were distributed among the quinquennial periods as follows: Up to 5 years there were 3; between 6 and 10, 2; between 11 and 15, 2; between 16 and 20, 3; between 21 and 25, 16; between 26 and 30, 8; between 31 and 35, 4; between 36 and 40, 5; between 41 and 45, 1; between 46 and 50, 2; between 51 and 60, 1.

The side affected is named in 66 cases. Of these, the left was affected in 61; the right, in 5.

The character of the lesion is stated in 67 cases; of these, 37 were of the nature of empyema necessitatis; 28 were intra-pleural. In 2 cases both varieties of pulsation were present.

Of the 5 cases in which the right side was affected, 3 were of the nature of empyema necessitatis; 1 was intra-pleural; and in 1 both varieties were present.

In 35 of the cases of empyema necessitatis the number of tumors is stated. In 28 there was 1; in 5 there were 2; in 2 there were 3.

The outcome is stated with more or less definiteness in 46 cases. Of this number, recovery took place in 24; death in 22.

Of the total number of cases, 1 was reported in 1640; 1 in 1810; 3 between 1840 and 1849; 14 between 1850 and 1859; 8 between 1860 and 1869; 10 between 1870 and 1879; 23 between 1880 and 1889; 8 since 1890.

The pulsations are synchronous with the ventric-

ular systole. As a rule, they may be detected alike upon inspection and palpation. Sometimes they are not visible, but may be recognized by palpation only. When intra-pleural, the pulsation may be limited to two or three intercostal spaces. More commonly it occupies the greater part of the anterior aspect of the thorax as far to the left as the anterior axillary line. In some cases it has occurred posteriorly, and, in a few instances, as in the cases reported by Rees,[1] by Courbon,[2] and in one referred to by J. M. Barton, a pulsating empyema necessitatis existed in the left lumbar region. Frequently the pulsation is only of moderate force, requiring some attention for its recognition. In some of the cases, however, it has been forcible.

In the majority of cases the left side was affected. Comby, writing in 1889, said: "Il faut ajouter que les pleurésies pulsatiles sont toujours situées à gauche; on trouverait peut-être une exception à cette règle, on aurait de la peine à en trouver deux."

Of the 66 cases in which the side is designated, the left was affected in 61 and the right in 5, or 8.2 per cent.

Most of the cases are reported as cases of pulsating empyema. Of 41 cases, in which the notes refer to the character of the pleural contents, in 37 it is said that pus was present; in 1, yellowish, fetid fluid; in 1, caseous matter; in 1, bloody serum; in 1, turbid fluid. In the remaining 27 cases nothing has been noted of the character of the pleural contents.

Pulsating empyema has been mistaken for aneurism of the aorta. Only in exceptional cases does the differential diagnosis between these two conditions present serious difficulty. Aneurism of the aorta bears a definite relation to the central long axis of the chest; its invasion of regions of normally clear percussion is circumscribed; it is usually the seat of murmurs or other sounds synchronous with the rhythm of the heart. The signs of pulsating empyema, whether intra-thoracic or an empyema necessitatis, are, on the other hand, usually upon the left side and at a distance from the median line; the percussion-dulness is uniformly at the base of the chest and extended, and murmurs are not present. Empyema necessitatis is influenced by pressure and by the respiratory movement of the chest-wall; aneurism is not.

Difficulty as to the differential diagnosis between pulsatile empyema and thoracic aneurism can only arise in the case of an encysted empyema in close relation with the heart.

The anatomic conditions underlying pulsation in pleural effusions are: First, some degree of paresis of the intercostal muscles, such as occurs only in large pleural effusions usually of long standing. Second, local necrosis and perforation of the parietal pleura (empyema necessitatis); in both these conditions there is relative weakening of the wall of the chest. Third, pneumothorax, either latent or manifest; this condition has been observed in a majority of the cases; in a small number it has been apparently absent; in Case II of my series it was carefully sought for, but not found. Fourth, an atelectatic condition of the lung in whole or in part, the left lung being in relation with and adherent to the pericardium.

In Case I of my series the persistence of the pulsation in the upper intercostal spaces after Estlander's operation had been performed is to be explained by the fact that a strip of adherent and compressed lung extended from the pericardium to the point in question.

Numerous theories have been advanced in explanation of the phenomenon of pulsation in pleural effusions:

1. That of Traube, which attributes the pulsation to the condition of the heart and the pericardium; but cardiac hypertrophy and pericardial adhesions, far from being the rule, have been the rare exception, though pleuro-pericardial adhesions, as in all general pleurisies, have been noted.

2. A second theory attributes the conduction of the pulsations to the compressed and carnified lung, but as compression and carnification, with pleuro-pericardial adhesion, take place in all massive effusions, this condition cannot be invoked to explain the occurrence of a phenomenon so rare as that of pleural pulsation. This was the theory first advanced, but afterward withdrawn, by Comby.

3. The theory of Féréol assigns the pulsation to a pneumothorax of moderate extent, which may often be latent. The pulsation is here attributed to the transmission of the cardiac impulse through the confined air in the manner in which compression-waves are transmitted through the rubber apparatus of the cardiograph and other similar instruments. That this theory is insufficient, becomes manifest from the fact that in the majority of the cases of effusion with pneumothorax, pulsation is absent, and in certain of the cases, notably in Case II of my series, pneumothorax, as shown by the history of the case and by most careful search, did not exist.

4. The fourth theory attributes the pulsation to a variety of associated pathologic conditions: paresis of the intercostal muscles; intrapleural pressure; the energy of the heart's action. But weakening of the chest-wall and enfeeblement of the intercostal muscles are common conditions in old empyemata. Forcible action of the heart, far from being the rule in pulsating empyemata, is the exception, and as to

[1] British Medical Journal, Aug. 21, 1858, p. 703.
[2] Gazette des Hôpitaux, May 24, 1870, p. 237.

intra-pleural tension it is variable in pulsating effusions, and occasionally absent altogether.

To sum up, no one of the theories hitherto advanced is adequate to account for the rare phenomenon of pulsation in pleural effusion. We must await facts not yet brought to light to fully explain its mechanism. Among the conditions not hitherto noted which favor pulsation are (*a*) strands of atelectatic lung-tissue, reaching from pleuro-pericardial adhesions at one extremity by way of pleural adhesions at the other to the surface of the chest, and thus acting as conductors of the cardiac impulse, and (*b*) the elasticity of that part of the wall of the thoracic cavity on the left side, formed by the diaphragm in its relation to the fundus of the stomach. The latter condition, together with the convexity of the left wall of the heart in systolic tension and the almost synchronous diastolic tension of the aorta on the left side of the chest, as pointed out by Toft and Wintrich, serves to explain the greater frequency of pulsation in left-sided effusions.

UNILATERAL HYPERTROPHY OF THE FACE.

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UNILATERAL hypertrophy of the face is a much more unusual disease than its opposite, unilateral atrophy. In the accessible literature I have been able to find records of only a very few cases, and these few have been reported in Germany. It is not likely that the affection is confined to the German branch of the Teutonic family, but rather that greater interest is taken in medicine in Germany than in any other country, and that consequently a much larger number of rare and curious cases are collected, a circumstance long ago pointed out by Virchow, in speaking of the collection of material for writing a treatise on neoplasms. One of the cases of hypertrophy of the face was in fact a Lett, reported by a doctor living in the Russian Baltic provinces;[1] a matter of interest in connection with the recent extinction of the University of Dorpat, from which so much good work has emanated.

The interest in these cases lies in their exceeding rarity, and also in their presumable relationship to unilateral atrophy, to which so much thought and investigation have been given. It is by the careful reporting of such cases whenever found that some future collaborator may be enabled to draw valuable inferences as to the trophic functions of one of the most interesting nerves of the body, the fifth.

I have been able to find mention of only nine cases of this affection, seven of which were congenital, one commencing in the second year of life with no apparent cause, and one following neuralgia of the fifth nerve.[1]

On November 10, 1892, Dr. F. J. Hund sent me Gustav W., aged thirty-one, born in New York, of German parents. He is the eldest of a family of eleven children, five of whom are yet alive. There was no accident during the pregnancy,[2] and the patient was born at term without the aid of instruments. There are no other deformities in the family. The man has a pale, "café au lait" complexion, and both a brother and a sister that I have seen are also pale brunettes.

The patient is stoutly and, with the exception of

[1] Dr. med. Ernst Kiwull, assistant in the City Hospital, Riga.

[1] The following is a list of these cases:

1. Beck's case, congenital, reported in Med. Annalen von Puchelt, Chelius und Naegele, in the year 1836. Quoted by Ziehl, Virchow's Archiv, vol. xci.

2. Friedreich's case, congenital, reported in Virchow's Archiv, 1863. Quoted by Ziehl, Virchow's Archiv, vol. xci.

3. Heumann's case, congenital, reported by Friedreich with the foregoing case. Quoted by Ziehl, Virchow's Archiv, vol. xci.

4. Passauer's case, congenital, reported in Virchow's Archiv, 1866. Quoted by Ziehl, Virchow's Archiv, vol. xci.

5. Berger's case, following neuralgia of the trigeminus, reported in the Deutsche Archiv f. klin. Med., 1872, ix, p. 393. Quoted by A. Eulenburg in his article on "Hypertrophy of the Face," in Eulenburg's Real-encyclopädie, vol. viii, p. 384.

6. Fisher's case, congenital, reported by Prof. Dr. H. Fischer in the Deut. Zeitschrift f. Chirurgie, 1874, Bd. xii, p. 9.

7. Ziehl's case, congenital, reported by Dr. Franz Ziehl in Virchow's Archiv, 1883, vol. xci.

8. Schieck's case began toward the end of the second year of life, and is reported in the Berliner klin. Wochenschrift, 1883, Bd. xx, p. 700.

9. Kiwull's case, congenital, reported in the Fortschritte d. Medicin, 1890, Bd. viii, p. 121.

The case mentioned by Hüter (Grundriss d. Chirurgie, Bd. ii, p. 57) has been purposely omitted on account of insufficient data.

Stilling's case, reported in his work on "Spinal Irritation," published in Leipzig in the year 1840, can hardly be considered a case of unilateral hypertrophy, as there was enlargement and increase of the bloodvessels following a blow from a stone. The case is, therefore, as Ziehl says, vasomotor, and not trophic in origin.

The crossed hypertrophies (see a case reported by G. Lewin, Charité Annalen, No. 9, annotated in Virchow-Hirsch, Jahresbericht, 1884; and also a case reported before the Copenhagen Medical Society, by Dr. D. E. Jacobson, annotated in the Pacific Medical Journal, March, 1893), and those hypertrophies implicating also an arm or a leg, or even the entire half of the body, are excluded from consideration in this paper.

Jonathan Hutchinson and Alexis Thomson report one case each of unilateral hypertrophy of the skull. The history in Hutchinson's case is so meager that one cannot tell if the hypertrophy was confined entirely to the distribution of the fifth nerve or not.

The history of Thomson's case is fuller, and, although he does not say so in so many words, one might reasonably infer that there was no other hypertrophy present, no hypertrophy either of the trunk or of the limbs. Thomson was fortunate in securing an autopsy in his case, but no investigation of the fifth nerve seems to have been made.*

[2] In Passauer's case, the mother while pregnant had been crushed against a wall. The child, however, was born at term.

* Atlas of Clinical Medicine, by Byrom Bramwell, M.D., vol. ii, part i, p. 6.

his face, symmetrically built, and enjoys good health. At two years of age he had "brain fever," and was twice given up by the physicians. He has never had any other severe illness in his life, and neither he nor any of his family remember his ever having received a severe blow upon, or contusion of, the head.

The man has never suffered from neuralgia. There is a deep sunken scar on the left cheek over the inferior maxilla, the result of an abscess that formed at eight or nine years of age. His mother says that much pain attended the expression of the contents of this abscess, but further than this there is no recollection of any pain or neuralgia. The mother was closely questioned as to the first dentition, and she asserted positively that the teeth came all right.

The first sign of the disease noticed was an enlargement of the gums at ten years of age. A photograph taken at about five years of age shows the full face looking absolutely symmetrical. In another tintype, taken at fourteen years of age, the left eyebrow appears to be normal, but the mother says the deformity of the left side of the face (which is partly turned away in this picture) was noticeable at twelve years, and has been growing steadily more marked ever since.

The deformity can all be included in an irregularly quadrilateral figure, bounded by a line starting on the top of the head at the anterior extremity

FIG. 1.

of the sagittal suture, running downward and forward along the middle of the forehead, and so on down the nose to the lower border of the chin, then from the chin upward and backward along the lower border of the inferior maxilla to the tip of the left mastoid process, and thence upward to the point of commencement, the anterior extremity of the sagittal suture.

The supra-orbital, malar, and mental regions show the most marked hypertrophy. At these points the tissues are raised up in large tumefied masses, and not alone the soft tissues, for the bones themselves can be felt to form part of the deformity. Fig. 1 shows how decidedly unilateral the affection is, for especially on the forehead and nose it comes just up to the median line. The deformity of the upper lip and of the gum encroaches slightly on the right side, but only slightly.

Some idea of the amount of enlargement of the face in this case may be gained by stating that the distance from the philtrum to the tragus is six and one eighth inches on the left side, and only four and seven-eighths inches on the right.

The skin of the entire left side of the face, with the exception of that covering the lower posterior portion of the cheek over the masseter muscle, is

FIG. 2.

rough, coarse, thickened, in some places even tumefied, somewhat darker than on the other side of the face, and the hair, both lanugo and otherwise, of this altered skin is abnormally coarse. The roughened, coarse, rather dark appearance of the skin is due to several factors, of which first might be mentioned a number of flattened elevations, particularly well seen on the cheek, which will be referred to again in speaking of the microscopic anatomy of the skin. Other causes of this rough appearance are the thickening, which can be appreciated on pinching up the skin; the enlarged mouths of the sebaceous follicles, giving the skin a "saddle-leather" look; comedones, of which there are a great number; and finally, the coarseness of the hair. The lanugo hairs are so stout on the left side of the nose, and on the upper part of the left ear, that the man often has to clip them.

The most marked bony enlargements are seen on the forehead. Michael Angelo himself is outdone by a supra-orbital ridge that projects away forward, and is surmounted by a particularly shaggy eyebrow, coming well down on the root of the nose. This, with the tumefied condition of the soft parts of the malar region, and also the enlargement of the malar bone, places the eye at the bottom of a deep cavern, and gives it a particularly sinister, threatening look.

The whole expression of the right side of the face is one of peace and contentment; that of the left, one of gloom and ferocity. The entire external surface of the frontal bone is roughened, and besides this it has two immense enlargements on it. One of these is at the inner extremity of the supra-orbital ridge and is rounded, smooth, and projects forward like a blunt horn. It is well seen in the profile view of the right side of the face (Fig. 2). There

is an immense smooth roll of bone running upward, backward, and inward from the outer extremity of the supra-orbital ridge, to be lost in the general surface of the skull in the neighborhood of the anterior extremity of the sagittal suture.

The scalp and the hair of the head are normal.

The enlargement of the shell of the left ear (Fig. 3) is confined to its upper half, and is undoubtedly caused by hypertrophy of the cartilage, for the skin covering it is normal, with the exception of the lanugo hairs already mentioned.

FIG. 3.

Photograph taken five years ago.

The left palpebral fissure is narrowed by the growth downward of the upper lid, especially of its inner half, which gives the outer angle an uptilted appearance well seen in Fig. 1. This hypertrophy involves the free border of the lid, and forms a number of nodular outgrowths, out of which the coarse eyelashes project at different angles. The outer half of the lower lid is hypertrophied, but not so decidedly as the inner half of the upper lid.

Dr. H. L. Wagner kindly examined the eyes and nose for me, and found that a slight blurring of the field of vision of the left eye is due to the faulty removal of the lachrymal secretion by the deformed upper lid. He also found that there is an excavation of both discs, more marked upon the left than upon the right. There is no engorgement of the discs, the bloodvessels being perfectly normal and showing no evidence of intra-cranial pressure. This is an important point which I wish to accentuate, because of the very prominent part that hypertrophies of the hypophysis seem to play in giant growths, in akromegaly, for instance. In all other respects the eyes are normal; the media are clear; the movements of the eyeballs are faultless; the pupils react to light, and in accommodation; and the conjunctivæ are sensitive.

The enlargement of the left nasal bone and of the corresponding cartilage causes the nose to appear more flattened, and to join the cheek at a much more obtuse angle on the left side than on the right, and also narrows the left naris. Except for this narrowing of the left naris Dr. Wagner found the nasal passages absolutely normal. The left nasolabial sulcus forms a striking feature, being very deep, and at its lower angle the skin is warty, resembling the condition sometimes seen in elephantiasis.

In some of the cases observed there has been found an increased flow of saliva on the affected side. No such increase of spittle was noticed in this case, for the mouth was not abnormally wet. The left corner of the mouth was moist, but this was due to the angle being dragged down by the heavy tissues. The action of the mimic muscles was necessarily interfered with by the increased thickening and weight, but no paralysis could be detected—the patient could draw back the corners of his mouth, elevate his upper lip, and protrude his lower lip, whistle, etc.

The inferior maxilla is enlarged and roughened from the symphysis back to about the middle of the body; thence backward it seems to be normal.

The teeth are very good and are not hypertrophied, but the left upper alveolar process, with its gingiva, is immensely enlarged. The gum is enlarged both internally and externally; the enlargement of the external surface begins at the right border of the right central incisor, and bows away out forward under the upper lip, which is stretched tightly over the alveolus when the patient laughs. This part of the gum is very rough, and there is a good deal of white epithelium on it, forming leukoplasic-like patches. There is a rough projection on the anterior surface of the lower gum to the left of the median line. The hard palate behind the front teeth is a good deal more ridged than normal. Laterally, the hypertrophied gum projects as an immense tumor into the roof of the mouth.

FIG. 4.

Showing hypertrophied gum of the upper jaw. (From a photograph made from a cast by Dr. A. H. MILLBERRY.)

The left wisdom tooth and the second molar tooth are outside the line of articulation with their opponents, and, possibly because of lack of support and resistance from those opponents, have also fallen below the level of the other teeth of the upper jaw. The upper first molar was extracted two years and a half ago by the man's dentist, Dr. A. H. Millberry, and at that time the second upper bicuspid and all three molars were entirely covered in by the hypertrophied gum. Dr. Millberry removed this covering in large lamellæ, without pain and without bleeding. The patient says he does not remember ever having seen these teeth till then.[1]

[1] The alveolar process was enlarged in Friedreich's, Passauer's, and Kiwull's cases.

There is no hypertrophy of the tongue, and the tonsils are normal.[1]

No derangement of the senses of touch, heat, cold, pain, localization, taste, smell, or hearing could be found.

The patient believes that he perspires more freely on the left side of the face than on the right, and that he always wipes the perspiration from the left side of the face first.

Both the patient and his friends, and among them Dr. Millberry, who has known him for a long time, say that the deformity, especially of the frontal and malar regions, is slowly but distinctly progressing.

Dr. Hund took out large pieces of skin from the malar region, upper lip, and chin, which greatly improved the patient's appearance. Whenever, during the operation, the skin happened to be squeezed, a large amount of sebaceous matter oozed out of the openings of the fat glands.

The microscopic sections which I prepared from the tissue removed by Dr. Hund showed an immense increase of the sebaceous glands, especially of the chin; the sections were extremely brittle, easily breaking along the sebaceous glands when the cover-glass was pressed down; and it was also noticed that in introducing sutures into this part of the face after the operation, the needle passed through much more easily than through either the skin of the lip or of the malar region. The brittleness and the lack of resistance to the needle were attributed to the increase of the sebaceous glands. In all of the pieces removed there was a considerable amount of round-celled infiltration in the course of the bloodvessels.

The little tumor-like elevations of the skin of the cheek, already mentioned, were, on microscopic examination, found to be due to comparatively large masses of concentrically arranged epithelial cells, which had undergone hyaline degeneration, and which were lying in the sebaceous glands. These masses seemed to act like foreign bodies, for the surrounding connective tissue was richly infiltrated with round cells.

The epithelial layers of the skin were not thickened, except along the verrucose portion of the naso-labial sulcus, and there was no increase of pigment in the Malpighian layer. Therefore the hypertrophy of the soft parts is to be referred to an increase in the size of the hairs and of the sebaceous glands, and also to the plugging of the sebaceous glands with sebum and with degenerated cells, and probably also to an increase of the connective tissue and fat.

That this case is progressive there can be no doubt; all the evidence I have been able to gather has been affirmative on this point. It seems equally certain that it is not a congenital case, and in this it differs from all other cases reported, excepting those of Schieck and Berger. It seems improbable that it could have existed even to a slight extent in such an exposed situation as the face for so long a time—up to ten years of age—and have escaped not only the mother's but also the camera's eye.

The etiology of the condition is obscure, for we can hardly admit, with our present knowledge of the disease at any rate, either the "brain fever" or the abscess of the cheek as causes; the latter seems to be the more probable cause, because it occurred a short time before the enlargement of the gum was noticed, and it might have acted as a trauma, or like the neuralgia in Berger's case; yet it does not appeal very strongly to one as a cause. We have here, therefore, a case of progressive unilateral hypertrophy of the face, not congenital, not having any demonstrable cause, and not complicated by hypertrophy of any other part of the body—the direct analogue of progressive unilateral atrophy.

Up to the present there has been only one post-mortem examination in a case of unilateral hypertrophy of the face,[1] and that, unfortunately, was incomplete. There has, however, been a post-mortem examination in a case of progressive unilateral atrophy, a monument of well-directed industry, by Mendel.[2] In this case there was found a proliferative neuritis of the branches of the fifth nerve, especially of the second division, corresponding to the area of the greatest intensity of facial atrophy. The roots and the nuclei of origin of the fifth nerve were all normal, with the exception of the *substantia ferruginia* and the descending root on the affected side, which were atrophied. We may therefore infer, until proof to the contrary is presented, that in this case of progressive unilateral hypertrophy these same nerves are affected in some way unknown to us, the lesion possibly being irritative, and not atrophic, as in Mendel's case.

[1] There was unilateral hypertrophy of the tongue in Friedreich's, Heumann's, Passauer's, Ziehl's, and Kiwull's cases.

There was enlargement of the tonsils on the affected side in Friedreich's, Ziehl's (enlarged and also progressive), and Kiwull's cases.

[1] Friedreich's case.

[2] Ueber Hemiatrophia facialis. Reported before the Berlin Medical Society, April 11, 1888; Berliner klin. Wochenschrift, May 7, 1888.

CYLINDROIDS IN THE URINE, AND THEIR SIGNIFICANCE.[3]

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CYLINDROIDS, so named from their resemblance to tube-casts, or "cylinders," are peculiar bodies first found in the urine of patients suffering from scarlet fever, by Thomas,[1] of Leipzig. Similar bodies had been previously noted by Meyer,[2] Lehman,[3] Frerichs,[4] Wyss,[5] Bock,[6] and Obermeyer,[7] in various conditions, but no accurate and systematic description had been published prior to the appearance of Thomas's paper. Subsequently, Pollak and

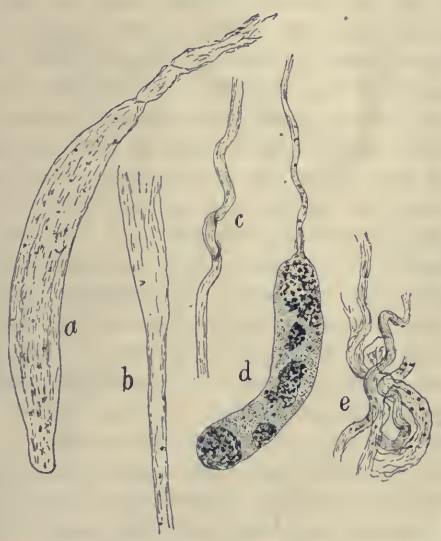
[3] Read before the Pathological Society of Philadelphia.

Török[8] gave the subject careful investigation and experimented with animals to determine the nature and origin of these bodies. With the exception of these investigations, however, the question of the significance of cylindroids has of late received little attention.

The appearance of cylindroids is even more varied than that of true casts, but a regular succession of changes may be traced from one kind to others at first sight altogether different. It is possible, however, to distinguish certain types, which serve well for purposes of description, and we may consider them as of three forms:

1. The most frequent variety appears as thin, thread-like, or filamentous bodies, composed of transparent material, sometimes faintly striated, more frequently hyaloid, and always of considerable length. They may be traced for long distances across the slide and finally taper to a fine point or disappear from view by their extreme transparency. Sometimes they occur singly; more frequently they are in clumps in which the individual fibers are so massed together as to be inseparable from each other. Occurring singly, or even in small clumps, this form may be easily overlooked if too much light or too high a power is used in the examination. A lens of one-fifth inch focal length is to be preferred, and the light should not be central and intense.

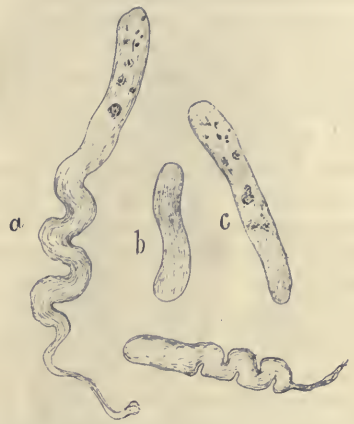
Fig. 1.



Albuminous urine. *a*, *b*, and *c*. Ribbon-like forms. *d*. Cast-like form, with cells upon surface. *e*. Filamentous forms in a clump.

2. Next in point of similarity is a form that appears as ribbon-like structures, composed of material like the last, but more generally striated and evidently flat or "ribbon-like." They are frequently crooked or bent, and often tortuous. When bent at a sharp angle the edge of the cylindroid may be turned upward and clearly demonstrate the flatness of the body. The tortuosity is sometimes marked and appears simply as an exaggeration of what we are accustomed to see in some hyaline casts. The striations are fine longitudinal streaks, which are just distinct enough to give a general shading to the cylindroid, without becoming apparent as distinct lines. This peculiar, shaded, transparent structure is quite characteristic, when once one is accustomed to observe it.

Fig. 2.



Non-albuminous urine. Cast-like forms, with deposit of urates.

Not rarely, this form presents the appearance of collapsed tubes of transparent material, not unlike, in this respect, the fibrinous casts of membranous bronchitis, though, of course, much more delicate and therefore completely collapsed. In size they vary from that of the narrowest to that of the broadest tube-casts, and they are sometimes much broader than any tube-casts I have ever seen. Like the filamentous form, they are long and occasionally, though more rarely, aggregated in masses. They may be forked or branched at the ends, and may even break up into a distinct leash, as seen in Fig. 1 (*b*).

3. A third, or cast-like form, is distinguished by its more marked resemblance to true casts, either hyaline or granular, and with this form I shall be mainly concerned in speaking of the importance of recognizing cylindroids. It is much shorter than the others, striations are more rarely present, and the appearance, as, indeed, the nature of the body, is rather that of a solid cylinder. The resemblance to hyaline casts is most striking, but these cylindroids may, in nearly all cases, be distinguished by the fine tapering end, or, if there is an abrupt ending, by the filamentous projection or tail, as is well shown in Fig. 1 (*d*). Unfortunately, however, it sometimes happens that the resemblance to a cast becomes

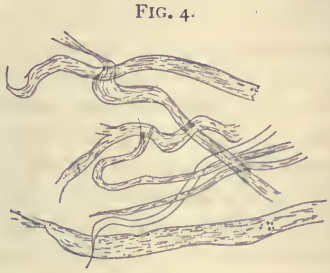
complete by the absence of the tailed extremity, as may be seen in Fig. 2 (*b* and *c*), and Fig. 3 (*a*). In such case there remains only the somewhat peculiar transparency or translucency to make the distinction, and this is a matter of doubtful value. I believe that there are certain forms that cannot be distinguished from true casts.

FIG. 3.

Non-albuminous urine. *a* and *b*. Cast like forms. *c*. Filamentous.

Each of these forms is liable to alteration by the presence in the urine of various deposits, which may cling to the cylindroids, as they do also to casts. In cases in which there is considerable deposit of urates the latter may so cover the cylindroid as to produce the appearance of a granular cast, either pale or dark, according to the quantity of deposit. As a rule, however, the urate granulation is readily distinguished by the halo that surrounds each particle, and that is doubtless due to the refractive property of the granules. In other cases oxalate crystals are seen upon the cylindroid, and in still others epithelial cells or leukocytes, when the appearance is most strikingly like that of an ordinary cellular cast (Fig. 1 (*d*).

FIG. 4.



Filamentous and ribbon-like cylindroids.

The recognition of cylindroids is rarely difficult, if ordinary care be taken. The filamentous form may be overlooked if too much light is used, but, if seen, can scarcely be mistaken for anything else. The tape-like form might, under the same circumstances, be taken for a hyaline cast, from the fact that only a part of its length might be visible; but the peculiar striation, the bends and the tortuosity ordinarily make its recognition easy. The presence of clumps or masses either of this or of the last-named form would make the nature of the body still more manifest. In the third or cast-like form the difficulty, however, is considerable, and there are cases, as I have said, in which no distinction can be made. In these instances the abundant presence of other cylindroids of unquestionable type would incline one to regard the doubtful body as a cylindroid, though it must not be forgotten that cylindroids may be found in association with undoubted casts. If the body in question has a filamentous end or tail, I should not hesitate to class it as a cylindroid.

It might properly be asked what proof there is that cylindroids of the completely cast-like appearance ever occur, and on what ground they are distinguished from true casts. I can only answer that I have found in the non-albuminous urine of patients, not at all presenting the clinical manifestations of chronic nephritis, an abundance of cylindroids of the filamentous and tape-like form, and then an occasional one having the appearance represented in Fig. 2 (*b* and *c*) and Fig. 3 (*a*). Indeed, the two cases from the urine of which these figures were drawn strikingly bear out this view. In neither was there any albumin discoverable by cold nitric acid, heat and nitric acid, or the test with trichloracetic acid (which I believe is very delicate); neither presented clinical features to be ascribed to nephritis, and in each there were many undoubted cylindroids, with a few such as those here pictured. I am of the opinion, then, that there are cylindroids of this type whose nature and significance are similar to those of the other forms. This sugests the inquiry as to the possibility of such cast-like forms occurring unassociated with manifest cylindroids; but as we have no definite criterion by which they could be distinguished from hyaline casts proper, we should for the present be compelled in such cases to regard the structures seen as hyaline casts, whether the urine be albuminous or not.

The formation and origin of cylindroids were carefully considered by Thomas, and later by Pollak and Török. The latter instituted experiments on animals to determine the place and manner of their formation, and definitely settled the matter by finding them in the renal tubules, in sections of the kidneys of animals poisoned with turpentine and other irritants. The form alone would suggest this, without the definite proof. Their composition seems to be like that of true casts, from the fact that they dissolve readily in acetic acid, as do casts. This test at the same time disposes of the view that they are composed of mucus, and the name "mucous cylindroids" is, therefore, improper. In some

cases the cylindroids do not so readily dissolve in acetic acid, and Pollak and Török sought to show that such forms differ from the ordinary cylindroid in taking origin in the various tubular glands connected with the urinary mucous membrane, but this view yet lacks proof. Whether the cylindroids produced in the renal tubules are composed of substances derived directly from the blood, or of excretions of the epithelial cells, practically reopens the old discussion of the same question in regard to tube-casts, and the truth will probably be found in accepting both theories—the blood and the epithelial cells each take part.

Thomas, as well as later observers, conceived the possibility of true casts being formed by the folding together and fusion of cylindroids, and pictured forms like that shown in Fig. 2 (*a*) to prove this possibility. It seems probable enough that such an occurrence might take place occasionally or even frequently, but the matter at present lacks substantial proof. It is not unlikely, on the other hand, that a process of moderate activity might produce in the tubules hollow casts that, later, might collapse and form ribbon-like bodies; whereas, in more rapid and severe inflammatory conditions, an immediate output of excretory material might give rise to solid cylinders. All of this, however, is speculative.

The disease-conditions with which cylindroids have been found associated have been most varied, and it has been said that they occur in healthy urine. To the latter, Thomas objects that the patient or the physician himself might easily overlook some trifling affection, when in reality renal irritation could, by careful examination, be shown to exist. I have myself never seen cylindroids in urine that seemed perfectly normal in other respects. I have found them most commonly and most abundantly in urine in which there was excess of urates or oxalates; and since my attention has been directed particularly to their study, I have rarely failed to find at least a few cylindroids in such cases. As already mentioned, Thomas found them in the urine in scarlet fever, and after him other observers encountered them in various infectious diseases. Sometimes they occur in cases of undoubted nephritis before casts make their appearance; after the latter have disappeared in convalescence; or associated with casts throughout the case.

It will have been noted that in all of the diseases with which cylindroids have been found associated, we have reason to think that there is renal irritation. In the infectious fevers, particularly scarlatina, degeneration of the epithelium of the tubules is almost a constant feature; in nephritis it is most marked; and, according to the view of most clinicians, the presence of an excess of uric acid or urates occasions irritation of the lining cells of the uriniferous tubules, as of the bloodvessels. It is precisely in the class of cases that Da Costa[1] has recently described under the title of "The Albuminuria and Bright's Disease of Uric Acid and of Oxaluria," that cylindroids occur most abundantly, and in these the clinical evidence of renal irritation is certainly considerable. Of the pathologic conditions present in these cases Da Costa says: "I think [the condition is] essentially a congestion of the kidneys, with, should the hyperemia persist, slight local inflammatory changes in the vascular cortex from the irritating effects of excreting increased amounts of ill-formed or broken-down tissue in the shape of urea, uric acid, or, these imperfectly oxidized, as oxalates." These conditions, according to my belief, are the cause of the occurrence of cylindroids; and the latter, I contend, do not occur in urine when such or similar renal conditions are absent. The presence or absence of albumin or its amount cannot, in most cases, be taken as a measure of the degree of renal irritation, and we find cylindroids when there is little or no albumin, as well as when there is a considerable quantity. In the infectious diseases the percentage of albumin is probably a better indication of the degree of irritation or disease, and Thomas found in scarlet fever, first, moderate albuminuria with cylindroids; later, more albumin and tube-casts; and, during convalescence from the nephritis, again diminishing amount of albumin and return of cylindroids, with absence of the casts, until finally all abnormal constituents disappeared.

In the cases of lithuria and oxaluria with which I have found cylindroids prominently associated, there have been some presenting a high degree of albuminuria and a larger number in which the presence of albumin could not be detected by any test. This point has already been referred to, and such cases as those from which Figs. 2 and 3 were taken have doubtless frequently been put down as instances of nephritis without albuminuria. I am sure I have done so myself in several instances.

It may be asked what advantage there is in separating cylindroids from casts proper, as it is admitted that both are formed within the renal tubules, are composed of similar material, and are indicative of renal irritation. Despite these facts there is much and good reason for maintaining a distinction. Of course, in a strict sense, these structures are casts or moulds of the tubules, but their form and appearance, excepting in the few cases referred to, easily distinguish them from the ordinary cast, and their significance is entirely different. Just as there is a great clinical advantage in separating the

[1] Amer. Journ. of Med. Sci., January, 1893.

"albuminurias and Bright's disease of oxaluria and uric acid," which Da Costa speaks of, from ordinary chronic nephritis, in which the prognosis is so much more grave, there is an advantage in keeping the cylindroid, an indication of mild renal congestion and irritation, separated even in name from the nephritic cast, whose significance is more ominous.

If we could learn to feel that casts after all are not always an indication of serious renal mischief (as they undoubtedly occur in cases of transient renal congestion, icterus, and other conditions), it would be less necessary to retain the special name, "cylindroids." As far as the form of cylindroid that is almost or quite indistinguishable from ordinary casts is concerned, it is manifest from what has been said that there may be a regular succession of forms, from the marked and distinctive filamentous cylindroids up to such as are in reality true casts; but when the latter occur singly or in small number amidst numerous distinctive cylindroids, one cannot but view them with a considerable degree of composure. On the other hand, when hyaline casts appear in the urine in some number, without cylindroids, it would appear that the congestion or irritation producing them had been from the first more severe than such as ordinarily gives rise to cylindroids.

My conclusion is that cylindroids are formed in the renal tubules as a result of moderate renal congestion or irritation, that they may occur in albuminous or non-albuminous urine, and that they may be of such appearance as to be almost indistinguishable from ordinary casts, or may even be transformed into such.

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CLINICAL MEMORANDA.

TWO CASES OF LABIAL CHANCRE IN CIGARMAKERS.

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ATTENTION has been called of late in the European journals to the frequency of extra-genital infection with syphilis. It has long been known that such cases occur. Casenave recorded a number in the early decades of the century, and subsequent observers have added to the list. The mass of recorded instances is already too great to be collected. It seems very probable, however, that these unusual infections are even more numerous than was ever suspected. An increased familiarity with the early symptoms of the disease, and the inclusion of syphilography in the curriculum of our medical schools, have led to a more careful search for the seat of the initial lesion in apparently mysterious cases; with the result that such unexplained cases are becoming much more rare. No one now believes in the occurrence of syphilis without a chancre, though it may have been unnoticed by the patient. As a chancre has a definite life-duration of its own, though within rather wide limits, one situated within the urethra, within the rectum or within the vagina may readily escape the patient's notice, more especially as it is usually entirely painless. On the other hand, a chancre situated upon some portion of the body other than the genitals is liable to be mistaken for a furuncle or boil, or to be neglected entirely.

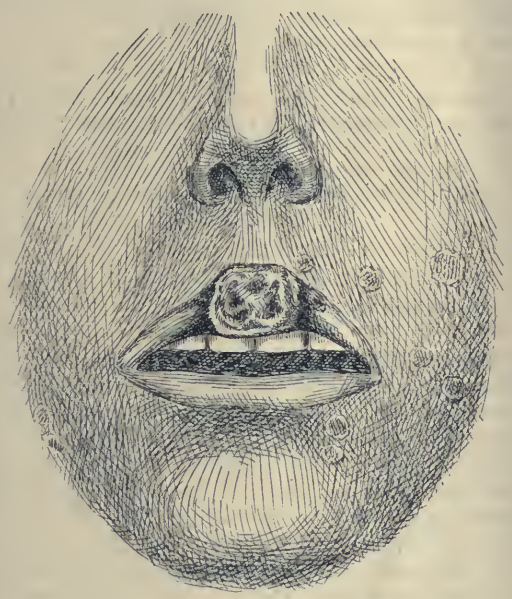
It must never be forgotten that a chancre and the subsequent syphilis constitute a venereal disease only by accident. The contagium will grow in any human body that has not already been infected by it. It can enter the body at any point where there is a break in skin or mucous membrane. It can be transferred from one subject to another without direct contact, by means of an object or person acting as intermediary. It is simply because during copulation individuals usually come into close and prolonged personal contact favorable for the transmission of a living, organic contagium that is in the blood, that most chancres are situated upon the genitals. If any other act of social life involved similar processes, chancres would be as common on the organs employed as it now is upon the penis. In certain regions, where peculiar customs prevail, we do indeed find this to be the case. Thus, long series of cases have been recorded in Russia, where the habits of the peasantry are not of the most cleanly or hygienic. A common domestic remedy in that country for certain affections of the eyes, such as furuncles, small abscesses, etc., consists in the sucking or licking the affected part by one of the patient's relatives or friends. This primitive therapeusis is in vogue with us only in the case of snake-bites, where it has a rational basis and some success. Snake-bites, however, are rare; nor do I know a single case in which the treatment has caused infection of any kind.

The common use of instruments that are taken into the mouth has caused many epidemics of syphilis. Notably was this the case among the French glass-blowers, so that governmental interference finally became necessary. The long tube used by a gang of men in common was not to be employed without an "embout" or mouthpiece, of which each workman was compelled to have his own; and heavy penalties were inflicted for a violation of the rule. The men accepted the innovation with enthusiasm at first, but they soon relapsed into their former and easier habits; and Chassagny, the inventor of the mouthpiece, records with a sigh the failure of his well-meant efforts.

In our own country, with more cleanly habits, such sources of infection are rarer. Yet they do occur, as the two cases that I am about to record will prove. The infective source is of the greater interest, as it directly

affects a very large portion of the community—the cigar-smokers.

A. McK., aged nineteen, born in the United States, and a cigar-finisher by occupation, came to me at the N. W. Dispensary on January 11, 1892. In the first week of December, 1891, she noticed a slight swelling of the upper lip. Soon a small lump appeared, which continued growing in size during the rest of that month and finally became as large as a small walnut. On January 1st she first noticed some blotches on the face and body; but these, she affirms, have entirely disappeared. She gives an indefinite history of a sore-throat early in December. She has grown thin and pale, and has lost strength and appetite.



The patient thinks her affection a trivial one, but would like to know why the lump on her lip does not disappear. Though she does not feel very well, she has not let it interfere with her work; she expected it to go away of itself. She claims that her intimate friend, who finishes cigars on the machine next to hers, had the same thing on her lip three months ago, and that it went away in a short time without medicine. She thinks she must have acquired it from her friend, as both drink tea from the same cup at lunch. She has had some little trouble about the genitalia, which she considered of no consequence.

The patient is a pale, anemic girl, undersized for her age, and rather stupid. On her upper lip, at about the middle line, is a lump as large as a hazelnut. It is cartilaginous to the touch, sharply limited, and entirely painless. Its external surface is occupied by an irregularly square, excoriated patch, the base of which is uneven, dark greenish-gray in color, and slightly secreting. It is a typical initial lesion, and from its location and prominence is noticeable at a considerable distance. A general macular syphiloderm is in full bloom upon her body, though slight upon the face. The characteristic adenopathy is well marked everywhere. She has a diffuse specific pharyngitis. The vagina contains moist papules, and there is a profuse vaginal discharge.

This, then, is the condition of a patient who claims to be fairly well, and who is merely tired of the disfigurement caused by the lump upon her lip.

The chief point of interest in the patient's history, however, is her occupation. Knowing something of the process of cigar-making, I questioned her closely in regard to it. That hand-made cigars are liable to be infected is a matter of common observation. Anyone who has watched the process cannot fail to have noticed the generally unclean condition of the workman's hands and table; but it is the finishing of the cigar that is most obnoxious. Most of the operators that I have seen use their saliva on the tips of their fingers to shape the ends of the cigars. A pot of paste stands on the table beside them, but it is quicker and easier to use the mouth. Besides this one and the same motion will suffice to cut off the redundant corner of the wrapper, and doing this with the teeth saves the trouble of taking up the knife again and cutting the point on the table.

I was not aware that the same thing was done with machine-made cigars, but the patient was quite frank when I questioned her about it. Machine-made cigars have to be finished in exactly the same way as the hand-made ones. The machine turns out the cigar unpointed, and the finisher completes the product by hand. She bites off the little triangular redundant piece of wrapper, and at the same time wets with her tongue the tip of the cigar, which is then moulded by hand. All the finishers that worked in the same shop as our patient did exactly the same thing. Paste-pots and knives were there, but it took too long to use them. The work was paid for by the piece, and could be done much more quickly in this way. Yes, she had heard something about the practice being forbidden, but no one did otherwise.

The patient's further history was unimportant. She was placed upon the usual treatment, and began to improve rapidly, both as regards the disease and as regards her general health. Both she and her mother, however, absolutely refused to believe in the seriousness and the contagious nature of her malady. She refused to stop work, and continued to make her cigars as before. I saw her some three or four times more, and then she withdrew from observation.

I had naturally been anxious to see her friend, from whom she supposes that she caught the disease; but I found it very difficult to do so. Finally, on February 3d, she came to the dispensary. Her history is as follows:

D. D., aged eighteen, born in the United States, in the beginning of October of last year first noticed a sore upon her lip. It began as a little pimple, but soon grew to the size of a nut. The girl gives a full and complete history of syphilis. There was a general macular eruption, general adenitis, defluvium capillorum, pharyngitis, etc. The sore on her lip disappeared spontaneously in a few weeks, and the girl did not then, nor does she now, attribute any importance to it or to any of the other symptoms. She works on the machine next to that of A. McK., whose intimate friend she is, and who sleeps with her. After much cross-questioning she admits having gone to a physician once when sick. He gave her a salve and some pills, but did not, she insists, tell her anything about the nature of her disease.

The patient is a tall, well-developed girl, of magnificent physique, and apparently in perfect health. A close examination, however, reveals the stains left by a former general macular eruption on the arms and chest. There are two large mucous patches upon the tongue. On the lower lip, a little to the left of the median line, is a small pea-sized, still indurated nodule, evidently the remains of the initial lesion. General adenitis is still perceptible, and there is a typical pharyngitis.

This girl worked all through her sickness, and is working still. She invariably finishes the tips of her cigars with saliva. She admits that the finishers have been told not to do so, but she says that the practice is universal. She was put upon the ordinary treatment, and improved whilst under observation. She laughed at the idea of having any general disease, and at the danger of contagion. She soon withdrew from observation.

Now here were two girls, in the early and most infective stages of syphilis, engaged in the manufacture of an article that is almost invariably taken into the mouth, and using their teeth and saliva to finish the very part of the article that comes in prolonged contact with the delicate and frequently abraded mucous membrane of the mouth. Every single cigar of the thousands that they must have finished in the last four months had carefully deposited upon it saliva that was admixed with the secretion from a chancre. When the sclerosis finally ran its course and disappeared, the secondary mucous patches, of much longer life and just as contagious, took its place. The necessary presence of acrid tobacco-juice in the mouths of these girls supplied exactly the conditions favorable for the continuance of the patches. Thus they will probably both continue to have an infective buccal mucosa during the entire active period of their syphilis. Their absolute disbelief in what was told them concerning the nature of their malady, and the certainty that they will not undergo the necessarily prolonged and careful treatment to be cured, render it probable that they will long remain in the contagious stage.

Meantime the cigars that they have finished have been scattered far and wide, to be smoked, in nine cases out of ten, without any protection in the shape of a holder between the tip of the cigar and the smoker's lips. I am well aware that tobacco is supposed to possess certain antiseptic qualities, but they are certainly not very marked, and we do not possess exact data as to their degree. We may hope for the best; but may not these infected cigars explain the origin of some of these mysterious labial, buccal, and tonsillar chancres that are seen; and, above all, may they not account for the very numerous cases of syphilis in which the inital lesion is not noticed at all, and the patient, though truthful, entirely fails to give any history of the beginnings of the disease?

The remedy for this particular source of infection is plain. The use of the lips and the saliva in the manufacture of cigars is a disgusting and filthy makeshift, and should be stringently prohibited. The Hygienic Section of the New York Academy of Medicine has, I am told, made some attempts in the past to put a stop to the practice, but their efforts have evidently been futile. Both patients affirm that the practice is universal in the large factory in which they work; and further inquiry has convinced me that the same state of affairs prevails in other factories and in smaller shops. Operatives will never of their own accord make a change that means decreased wages for them.

The employers, however, can be reached by law, and they can easily compel their operatives to use the paste-brush and the knife. There are State inspectors for these factories, and the local boards of health certainly have power. Each department and each floor of a factory is under the supervision of a foreman or superintendent, and no practice of the kind can be indulged in without his knowledge. A penalty of sufficient magnitude imposed upon the employer for every case of the kind would soon lead him to give stringent orders to his foremen, and without the connivance of these latter the practice could not continue.

25 WEST FIFTY-THIRD STREET.

A REPORT OF SOME FRACTURES TREATED WITH PLASTER-OF-PARIS SPLINTS.[1]

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AND

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THE object of this paper is to direct attention to the utility of the plaster-of-Paris splint in the treatment of fractures. The fractures occurred in patients whose ages ranged from three days to seventy-eight years. To secure a successful result with a break at the upper third of the humerus, in a child at the tender age of three days, is, frequently, a most difficult task. Such a case was Baby H., a girl. This child, a patient of Dr. L. Jurist, sustained, during a trying instrumental delivery, a fracture at the upper third of the left humerus. Dr. Jurist employed the usual methods of management for such injuries, but could not maintain the fractured parts of the bone in apposition. Nursing, bathing, clothing, and interference by an incapable nurse all combined to frustrate the Doctor's efforts to effect a good result.

Two days after birth, with Dr. Jurist's assistance, a plaster-of-Paris splint was applied as follows: *a*, A plaster jacket, extending from just above the umbilicus (the cord not yet having fallen off) to the armpits, was put on; *b*, the arm, from the wrist almost to the seat of the fracture, was incased, the forearm being held nearly at a right angle with the arm; *c*, the third section commenced immediately above the point of fracture, extended well over the shoulder and was connected with the jacket by a few turns of the plaster bandage around both the left shoulder and the jacket. The case on the arm immobilized the elbow-joint, while that part above the break secured the shoulder from all movement except rotation. Extension was now made and the last section of the case was placed over the seat of the fracture, overlapping the parts of the splint on the arm above and below it. The entire arm was then secured to the trunk by several turns around the jacket. In

[1] Read before the J. M. DaCosta Medical Society of Philadelphia, Pa., January 13, 1893.

fourteen days the plaster case was removed. The fracture had united in good position and was now protected for two weeks more by three strips of board extending from the elbow to the shoulder, thus allowing gentle manipulation of the joints. The plaster case was applied over absorbent cotton, which protected the skin from irritation. There was no deformity or loss of motion.

CASE II.—A boy, William M., aged three years, fell and produced a "T" fracture of the right humerus. The arm was much swollen at the seat of fracture, and there was great difficulty in applying a splint in such a manner as to secure proper approximation of the broken ends of the bone without making too great pressure with the splint and bandage. It was, therefore, decided that a plaster-of-Paris case would give the most satisfactory result. The case was put on, over absorbent cotton, in three sections, the third section being placed over the seat of fracture and connecting with the sections on the forearm and arm. The section on the arm extended from just above the elbow-joint to the armpit. The splint was removed in three weeks. Inspection of the arm at that time, and again in ten days, showed that there was good union with no deformity, and that the "carrying function" of the arm was preserved.

CASE III.—W. O., aged twelve years, as the result of a fall, suffered a compound fracture of the right ulna and radius at their lower thirds. Some resection of both bones was necessary for satisfactory approximation of their ends. Extensive cellulitis, with profuse purulent discharges, set in within a few days. The pain occasioned by the frequent dressing of the wound as well as the likelihood of non-union of the bones, rendered it needful to immobilize the entire arm. A plaster-of-Paris case was put on in three sections, as in the preceding case, except that the third section covered the seat of fracture and was not over the elbow-joint. The proximal section began immediately above the break and extended over the elbow and up to the axilla, while the distal section covered the extended hand and fingers. Trap-doors were cut in the case, allowing the arm to be dressed without giving pain to the patient or disturbing the bones. The boy made an uneventful recovery, with good use of the arm. The case remained on ten weeks. It is but fair to state that the broken ends of the bones had been pushed into the dirt, rendering asepsis almost impossible.

CASE IV.—Mary W., aged four years, an idiot, suffered a fracture of the upper third of the left femur. She was unusually hard to manage, requiring constant watching to keep her and the dressings in place. Finding that she could not be controlled, a plaster case was applied. The distal section began at the toes and extended to a point just below the fracture. The proximal section began above the break and incased the entire trunk. While this section was hardening the child was on her right side and the upper third of the bone was held in proper position, as though the whole leg were straight and unbroken. With the child still on her right side, the middle section was now applied and the entire leg was immobilized in extension. The splint remained on eight weeks, giving good union, with but one-quarter inch of shortening, which may have existed prior to the fracture. The child soon learned to walk without any limp.

CASE V.—J. B., a boy, aged three years, an emigrant, had his right femur broken at its upper third, during a storm at sea. His mother, with five other children, was compelled to leave him in order that she might join her husband, who had gone West some months before. Ten days after the injury, a plaster splint was made, as in the preceding case, and in twelve weeks the boy was cured and sent home. In this case there was no shortening, but the right leg may have been longer than the left prior to the break.

CASE VI.—W. M., nineteen years old, suffered a fracture of his left femur, at its middle third. Extension and sand-bags were used. After eight weeks, union having taken place, he was allowed to get up on crutches, but did not use them, and within ten days his leg was badly bent outward at the seat of fracture. He was etherized and his leg and trunk were incased in a plaster splint as follows: From just above the fracture to the armpits a continuous splint was applied, along the left side of which a stout strip of board, about two and one-half inches wide and four feet long, was fastened by some additional turns of the bandage around the plaster jacket. The second section extended from the toes to the seat of fracture. When these sections had set, the leg was firmly pressed outward and the board was now fastened by plaster bandages to the leg part of the splint. Thus the board exerted a continuous outward leverage on the leg below the seat of fracture. In three weeks the man got up with a straight leg and had no further trouble.

CASE VII.—Mrs. S., a widow, aged seventy-eight years, fell down a flight of stairs and suffered a compound fracture of the left femur, three inches above the condyles. The wound and the surrounding parts were rendered aseptic and dressed with mercuric-chlorid gauze after a little aseptic iodoform had been sprinkled over the wound. The patient was then etherized and a plaster splint applied. One section extended from the toes to just below the fracture, and a second section began above the injured part and covered the leg and trunk. The third and last piece of the splint was put on over the wounded part, connecting the first and second sections. The woman was carefully watched for a rise of temperature, which was rather expected, but none occurring, the splint was not removed until the ninth week. Gentle motion and massage were now employed to restore the function of the joints. The woman is, at the time of this writing, entirely cured and can walk as well as she ever could. She had no pain to speak of, and travelled six hundred miles on the cars within three months after the reception of the injury.

To sum up: All of these plaster cases were put on over absorbent cotton, thereby guarding against undue pressure from swelling or upon bony prominences. There were no bedsores or excoriations in any case. The patient's position could be changed, and bathing was practised with little discomfort. The plaster splint does not require constant re-application or re-adjustment, as do most splints, for in these cases the splints were not removed until a cure had been effected. Plaster splints are cheap and durable. In fractures of the upper extremities, the patients, after a few days in non-septic cases, may walk around with perfect security when wearing a plaster-of-Paris dressing.

A CASE OF RHEUMATIC FEVER WITHOUT JOINT-SYMPTOMS.[1]

BY ISAAC HULL PLATT, M.D.,
OF LAKEWOOD, N. J.

THE case here reported possesses somewhat unusual interest, presenting, as it does, symptoms not belonging to any one particular fever, and running an anomalous course throughout.

The patient is a married woman of early middle life, whose general health is and has been good. She spent last summer in a private cottage in the hills of central New Hampshire, at an elevation of about twelve hundred feet, where the hygienic conditions are supposed to be unusually good. The only qualification to this statement is that at one time during the latter part of the summer the water in the well used by the family became rather low, owing to the drought, and acquired a faint odor, upon the discovery of which its use for drinking-purposes was discontinued.

Early in September, the patient was one of a driving party that made a tour through the southwestern part of Maine, which occupied about ten days. On her return she complained of an unusual degree of fatigue, and on the following day appeared very tired and listless. In the evening of the day following her return, the temperature was found to be 101.5°; on the following morning, 99.5°, and in the evening, 102°. For three days the temperature followed a curve of this character, with the morning remission, and by that time the evening temperature was about 103.5°. The temperature-curve, the season of the year, and the feeling of exhaustion during the prodromal stage suggested enteric fever, which might have been attributed either to the water from the well or to some possible but unknown exposure during the journey. On the fourth day, however, the fever suddenly abated, the patient rapidly rallied, and in a few days was about as well as ever, and able to make the necessary preparations for her return to her winter home in Lakewood.

She arrived on the first day of October, only moderately tired from her journey, but on the evening of the third, complained of a feeling of extreme exhaustion, and went to bed early in consequence. The temperature was then found to be 102.5°. On the following morning it was 100°, in the evening, 103°; then in the morning, 101°; evening, 103.7°; morning, 102.5°. It continued to rise in this manner for five days. During this period there were no marked symptoms beyond the peculiar course of the fever, and a feeling of great exhaustion, which, of course, again suggested enteric fever. The bowels were inclined to be loose, but there was no diarrhea. The urine was normal in quantity, strongly acid, and free from albumin. The medication during this period was in the way of intestinal antisepsis, on the assumption of enteric fever. On October 7th, Dr. Westbrook saw the patient in consultation, but we were unable at the time to make a diagnosis. During the following two days the temperature continued to mount, reaching a maximum of 104.8°. The cold pack was repeatedly applied, and brought down the temperature; but upon the removal of the cold, the temperature would immediately mount again, returning in a few minutes to its previous elevation. During the height of the fever the skin acted freely, and the urine continued acid. Quinine in ten-grain doses was repeatedly used, without any antipyretic effect whatever.

On October 9th, Dr. Westbrook saw the patient again, and discovered a very faint direct aortic murmur. This, with the perspiration and the acid condition of the urine, led him to suggest the possibility of rheumatic fever, with a mild endocarditis. There had not been, nor did there appear subsequently in the case, any pain, redness, or swelling of joints.

To test the question of diagnosis the cold packing was stopped, whereupon the temperature rose at once to 104.5°, at which stage twenty grains of sodium salicylate with sodium bicarbonate were given. An hour and forty minutes later the temperature was 102.7°, but in another two hours it had risen to 104.5°. The patient was then given regularly, every two hours, twenty grains of sodium salicylate with an equal amount of sodium bicarbonate. During the next twelve hours the temperature gradually fell to 101°, and in the subsequent twelve hours to normal. The sodium salicylate by this time having caused some gastric disturbance and mild cerebral symptoms, it was suspended, whereupon the temperature rose to 102.5°, but upon the resumption of the medicine the temperature promptly fell to normal. It never afterward went higher than 101°. The subsequent history of the case was that of convalescence, and on October 27th, six weeks after the appearance of the first symptoms, the patient was pronounced well. During the continuance of the fever, there were no joint-symptoms; but during the few weeks following there were occasional slight pains in some of the joints, and the acidity of the urine was quite persistent. During this time the patient was kept upon alkaline treatment, with good effect. Ever since the attack there have been occasional twinges of this kind, and also wandering pains about the chest. In December she was examined by Dr. Henry Conkling, of Brooklyn, who discovered evidences of slight pleuritic adhesions.

With the exception of these slight pains the woman has since been well. The heart was left undamaged. It should be noted, as perhaps having some bearing on the case, that she had had for some years previously a very slight synovitis of one of the knee-joints, occasionally producing a slight degree of lameness and always a little stiffness and crepitation. This had been attributed to a fall in mountain-climbing.

In a cursory examination of the literature of rheumatic fever, I have failed to find the record of an exactly similar case, or of any case entirely free from joint-inflammation, though cases are not rare in which the joint-symptoms did not make their appearance till some time after the fever had been established. I regret that I have not had the opportunity of making a fuller research into the reports. The acid condition of the system, as evidenced by the rather profuse and sour perspiration, and the acid urine; the aortic murmur, transient in character; the sudden rise of temperature after it had been brought down by cold applications, and above all, the prompt and thorough response to sodium salicylate, leave little if any doubt that the case was one of rheumatic fever, slightly affecting the endocardium and pleuræ, and leaving the joints free.

[1] Read before the Alumni Association of St. Mary's Hospital, Brooklyn, March 23, 1893.

Enteric fever was absolutely excluded by the latter part of the history of the case. To exclude an irregular form of malarial fever is, perhaps, more difficult, but the fever bore no resemblance to any well-known type of malaria, and it is highly improbable that a malarial fever should not be in the slightest degree affected by quinine and be subdued at once and completely by sodium salicylate. It is possible, of course, for endocarditis to occur without rheumatism, but its existence is highly suggestive of a rheumatic origin when no other cause can be found.

The possibility of intra-pelvic inflammation was disposed of by repeated careful examinations of the pelvic organs, and by the fact that the patient has never, before or since the attack, suffered from any trouble whatever connected with these organs, but in this respect is and always has been perfectly normal. That sodium salicylate is an antipyretic in other affections than rheumatism, I am not prepared to deny, though I have never found its action in such cases very marked or trustworthy, but that it should cause a complete dissipation of the fever and a cessation of all of the symptoms in a few hours, in any other condition than rheumatic fever, appears to me highly improbable, and opposed to the teachings of all my reading and experience.

MEDICAL PROGRESS.

The Toxin of Tetanus.—COURMONT and DOYEN (*Province Médicale*, March 18; *Rev. gén. de Méd. de Chir. et d'Obstet.*, No. 22, 1893, p. 169), as the result of a study of the pathogeny of tetanus, arrive at the conclusion that the bacillus of Nicolaier gives rise to the symptoms of tetanus through the intermediation of a soluble ferment which it generates. This ferment, which is not toxic *per se*, elaborates within the organism a substance of tetanizing properties, comparable in its effects to strychnine. This secondary substance may be found in the tetanized muscles, in the blood, and sometimes in the urine. It resists prolonged boiling, while the products of the tetanus bacillus are rendered innocuous by exposure to a temperature of 149°. Certain conditions of temperature seem essential to this reaction. This will explain the immunity of frogs to tetanus in winter-time. Immunity, natural or acquired, artificial immunization, may be considered the result of influences that prevent, retard, or arrest this process of fermentation. It is probable that other products of microbic activity, said to be toxic, act equally as ferments, producing toxic matters within the organism. It may be that the paralysis and other late accidents of diphtheria can be explained in a similar manner.

Cornet-player's Cramp.—TURNER (*Lancet*, No. 3635, p. 995) has reported the case of a man, twenty-nine years old, who had played the cornet as a means of livelihood from the age of nine years. For two years he had observed that he was unable to sound certain notes, from an inability to direct the tongue for that purpose. These movements could, however, be performed readily and easily when the man was in his own room, practising, or when allowed his own time, but not when suddenly called upon to do so. After playing for some time, the condition seemed to improve rather than become worse. In all other actions, both in playing the cornet and otherwise, the movements of the tongue were uninterfered with. At no time was any pain felt. The tongue was large, atonic, and somewhat indented by the teeth, but this condition improved under treatment with strychnine and dilute hydrochloric acid. Toward the tip a few fibrillary contractions could be seen. The electric reactions were normal. There was no affection of the lips or soft palate, and the linguals and labials were well formed. The knee-jerks were equal and of normal force. There was no family history of neuroses. It was not known that other cornetists suffered similarly.

Congenital Absence of the Pectoralis Major and Minor.—ZIMMERMANN (*Corr.-bl. für Schweizer Aerzte*, No. 10, 1893, p. 358) has reported the case of a man, without family peculiarity, in whom the pectoralis major and minor and the mammary gland upon the right side were wanting, and the serratus magnus was diminutive. The right nipple was lower than the left, and its pigmentation, and that of its areola, was less than on the opposite side. The growth of hair and the deposit of fat were also deficient on the right side. The axilla upon the left was well defined. On the right the anterior margin of the axilla was constituted by a peculiar fold of skin, stretched between the arm and the chest and extending down to the elbow, which conveyed the sensation not of a simple duplicature of the skin, but of a tendinous band. The function of the arm and shoulder were, however, not appreciably interfered with. The entire upper extremity, excepting the muscles of the shoulder, was somewhat less well developed than the left. In diagnosis the juvenile type of muscular atrophy of Erb and anterior poliomyelitis were excluded. But two other cases of the same kind were found in the literature.

Spontaneous Rupture of the Symphysis Pabis During Labor.—OELSCHLÄGER (*Centralbl. für Gynäkol.*, 1893, No. 24, p. 563) has reported the case of a primipara, twenty years old, in which with the onset of labor-pains two eclamptic attacks occurred in quick succession. The lower extremities were edematous, and the urine contained a small amount of albumin. The promontory of the sacrum could be touched with two fingers introduced into the vagina. The head was quite high in the pelvis and but slowly followed in the grasp of the forceps, a not excessive degree of traction being exercised. As the head began to rotate in the small pelvis a crack was distinctly heard. Examination disclosed a separation of 1.15 inches in the situation of the symphysis pubis, and the delivery of a living child weighing nine pounds was soon readily effected. On the day following the labor a leather support was applied to the hips. For two weeks the region of the symphysis was tender upon touch and painful upon movement, but a week later the woman was able to be up and about, although a slight degree of separation of the pubic bones persisted.

The Relation of Age, Sex, and Social Condition to the Mortality from Tuberculous Disease.—In an analysis of 1771 fatal cases of tuberculous disease in the Swedish-Finnish community of Helsingfors during the years from 1882

to 1889, HOLSTI (*Zeitschrift für klinische Medicin*, Bd. xxii, Hefte iv u. v, p. 317) found that the mortality from this cause was incomparably greatest during the first two years of life, but declined thereafter, to reach its minimum between the years of five and fifteen; rising again, to reach its maximum between the years of thirty-one and forty, after which it again gradually declined. In general, the mortality from tuberculosis was greater among males than among females, except between the fifth and the twentieth year, during which period the greater number of deaths from tuberculosis occurred among females. After the maximum mortality had been reached, between the thirty-first and the fortieth year, the mortality among females gradually grew less; in males, however, the mortality continued at almost an unchanged level until the age of sixty.

Trephining for Cerebral Softening.—LANPHEAR (*University Medical Magazine*, July, 1893, p. 785) recommends trephining of the skull in cases of cerebral softening as a result of hemorrhage, embolism, or thrombosis, for the relief of such symptoms as mental irritability and mental aberration. He reports an illustrative case in a man of fifty-six who had been right hemiplegic and aphasic for six years as a result of cerebral hemorrhage. After the skull was opened and the dura turned back "fully a pint of broken-down brain and other debris of creamy consistence" was evacuated. The large cavity was carefully washed out with a sterilized solution, some of which was permitted to remain, and the wound was closed and an antiseptic dressing applied. There was no change in the palsy or the aphasia, but the mental condition was decidedly and permanently improved.

Influence of Faradism upon Irritability of Muscle and Nerve.—From a study of the behavior of muscles and nerves to the stimulus of the faradic current, MANN (*Deutsche Archiv für klin. Medicin*, B. v, H. 2 u. 3, p. 127) has found that the application for several minutes to a muscle or nerve of very weak currents, whose intensity is lower below the minimum necessary to induce contraction, is followed by no change in faradic irritability. Stronger currents that induce muscular contraction cause diminution of irritability in a degree in direct ratio to the intensity of the current and the duration of its application, it matters not whether the muscle be stimulated directly or through its nerve. Faradization repeated regularly for several days gives rise to an increase in the irritability of the faradized muscle or nerve.

Tumor of a Cerebral Peduncle, with Unilateral Tremor.—At a recent meeting of the Société de Biologie, BLOCQ and MARINESCO (*Le Mercredi Médical*, 1893, No. 22, p. 269) reported a case which during life presented left-sided tremor indistinguishable, graphically or clinically, from the tremor of paralysis agitans. Death took place from pulmonary tuberculosis, and at the autopsy a tubercle as large as an olive was found in the midst of the right crus cerebri. The tumor occupied a large portion of the locus niger, and, notwithstanding its volume, did not involve the crusta, the superior cerebellar peduncle, or the fibers of the oculo-motor nerve. There was neither ascending nor descending degeneration. In explanation of the tremor, irritation of the pyramidal fibers is suggested.

THERAPEUTIC NOTES.

Poisoning with Turpentine.—CARVETH (*Canadian Practitioner*, June, 1893, p. 429) has reported the case of a woman who, at bedtime, took about half an ounce of old spirit of turpentine mixed with an ounce of whiskey, in mistake for castor oil. The mistake was only noticed after the turpentine had been swallowed, but nothing was done at the time except to take a dose of castor oil. The patient shortly afterward fell asleep, but was awakened in the course of five hours with sickness of stomach. A little later she vomited, and after the lapse of several hours more she had a convulsion, followed by loss of consciousness. The pulse was weak, feeble, rapid; the face and lips pale; the patient restless, at times delirious and talking incoherently, but capable of being partly roused. Urine had been passed in generous quantity. Whiskey, spirit of nitrous ether, milk, and sweet oil were given, and warmth was applied to the body. Vomiting was induced by irritating the fauces. The vomited matters had a strong odor of turpentine ten hours after the fluid had been taken. After free vomiting, consciousness was regained and complaint was made of a burning pain in the right leg. Examination disclosed the presence upon the posterior aspect of the knee of a blister 5 by 13 inches in extent, the contents of which were watery and emitted an odor of turpentine. Gangrene of the superficial parts took place in this area, and fifteen weeks elapsed before the resulting ulcer healed.

Myxedema in an Insane Woman Successfully Treated by Means of Thyroid-feeding.—ALEXANDER (*Medical Chronicle*, vol. xviii, No. 3, p. 175) has reported the case of a woman, forty-one years old, who had been insane for seven years, and who had presented symptoms of myxedema for two years. The mental condition had become one of chronic mania, with considerable dementia. Treatment by means of thyroid-feeding was instituted, half a minced gland from a cow, mixed with bread-crumbs, being given twice weekly. The administration of the glands was followed by nausea, but emesis occurred on only one occasion. A marked improvement in the patient's physical condition was at once apparent, and continued until the manifestations of myxedema had disappeared. In the course of the treatment the woman became quieter, and fairly rational at times, but this improvement did not continue.

Sodium Phosphate for Trigeminal Neuralgia.—In a rebellious case of trigeminal neuralgia, in which all of the usual therapeutic resources had been exhausted without affording relief, GLOVIEUX, of Brussels, tentatively practised subcutaneous injections of sodium phosphate, and with admirable results. The patient, who had suffered for two years, was completely relieved. Ten other cases of trigeminal neuralgia were treated similarly, with success in seven. A solution of thirty grains of sodium phosphate in three ounces of distilled cherry-laurel water was prepared, and of this from fifteen to forty-five minims were injected daily.—*La Semaine Méd.*, 1893, No. 33.

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SATURDAY, JULY 15, 1893.

MEDICINE AT THE COLUMBIAN EXPOSITION.

ON the interior of the great dome of the Administration Building of the Columbian Exposition, at Chicago, hang eight bronze tablets commemorative of the eight events that most contributed to make our present civilization possible. One bears the name NEWTON, one COPERNICUS, names connected with the establishment of the principle of inflexible law and order in inorganic nature. One tablet celebrates the introduction of gunpowder, one the discovery of printing; one bears the name WATT and the date of the invention of the steam-engine, one the name MORSE—to whom is due our present system of rapid transportation and communication.

But perhaps no physician will fail to see the significance in promoting our present economic condition of the event celebrated by the tablet on the north wall:

> JENNER
>
> DISCOVERED THE PRINCIPLES OF
>
> VACCINATION IN 1796.

Europe might have thrown aside fatalism and superstition and become imbued with the idea of the stability and inviolability of Nature's laws; she might have printed books and papers; she might have obliterated feudalism with gunpowder and travelled by steam controlled by the electric telegraph;—nevertheless, without that security that vaccination has furnished from a pestilence we know now only by name, the industry and the wealth of to-day would be impossible. It is, perhaps, worthy reflection that nothing so much threatens the usefulness of this great exhibition as the possibility of an epidemic of Asiatic cholera, and to prevent such an epidemic we have only the uncertainty of quarantine.

Every physician who visits the Exposition and notices the fact that there is no combined medical exhibit will regret the lack of organization or lack of spirit that has allowed this great opportunity of advancing our professional interests to slip by unimproved. In the World's Congresses that are held in the Art Institute, a place was assigned to medicine, but it was not filled. It cannot be urged that the meeting of the American Medical Association and the Pan-American Congress, or the World's Congress at Rome, fills the place that the management of the Exposition proposed.

The hospital service for such emergency cases as the erection of the buildings for the Exposition naturally required has been improved and extended for the emergency work that now comes with the throngs of visitors. The emergency hospital is under the supervision of a medical director and a staff of thoroughly equipped physicians, every one of whom has had hospital service, most of them in the Cook County Hospital.. The hospital itself, though not an exhibition, is well worth the attention of medical visitors, and medical men will be received without formality. The equipment and furnishings are good, and the nursing is a fair representation of the nursing of the best hospitals in the country. The ambulance department is well manned, under the direction of a physician who has been thoroughly trained in the theory and practice of rendering first aid to the injured. Unfortunately the ambulances are of an antique, delivery-wagon pattern, similar to those that are being worn out none too fast in all of our large cities. Their inadequacy has lately been tested in an accident that threw upon the ambulance service the transportation to the hospital of fifteen or twenty injured painters and decorators.

Perhaps the most illustrative medical exhibit, and one that is well worth a protracted study, is that of the United States Army in the model hospital

just south of the United States Government Building. The first floor of this hospital is fitted out with a drug-room, a supply-room, and an office, and the ward itself contains a single model bed. The remainder of the room is filled with an exhibit from the United States Army Museum at Washington. It will require a considerable amount of time to properly study this exhibit, and, as there is usually a very great crowd in the rooms, physicians are advised to visit them early in the day. On the second floor of this hospital is a clinical laboratory in working order. A modest notice upon the stairway excludes all visitors except members of the medical profession; but anybody who chooses can go into the laboratory without a pass or without formality. A polite attendant will answer all questions that are asked in relation to the working of the laboratory, and a careful study may be made of this laboratory by making application for the opportunity from the officer in charge.

In the south end of the gallery of the Liberal Arts Building, the colleges and universities have their exhibit. The medical man will find much to admire in the exhibit of the Johns Hopkins University. The alcove in which this exhibit is placed is a good resting-place after a long tramp. All of the publications of the University are on tables and can be consulted. There are a few interesting exhibits from the medical departments of Harvard University, the University of Michigan, the University of Pennsylvania, and Columbia College; but we regret that the same spirit has not been manifested in the exhibits of the medical departments of these Universities as is to be seen in the exhibits of other departments of the same institutions. The veterinary department of the University of Pennsylvania has a very much more instructive and attractive exhibit than the medical department itself. In none of these exhibits is to be found a display of the work of medical students, and in fact nothing that shows the character or quality of medical education. From the standpoint of a medical teacher, there is no exhibit from these schools worthy the names and reputations these institutions carry.

The most instructive exhibit of the science of medicine is that of the twenty-one German universities. This display is to be found in the second and third galleries of the German section of the Liberal Arts Building. The German educational exhibit is shut off from the general public, and the medical visitor can have an opportunity of studying it only by giving his card to one of the German Imperial Guards, who patrol the exhibit, and requesting him to take it to the commissioner in charge. In this way an escort can be secured and every opportunity to study the marvellous exhibit that these universities have made. This exhibit is particularly rich in the department of medicine. It includes not only a careful study of the educational methods and curricula of the medical schools, but also a full account and fair exhibition of the material equipment of some of these universities. The equipment and material for anatomic study, including histology, is elaborately laid out in one section showing all of the instruments, manikins, preparations, microtomes, and microscopes used in this department, not only at the present time, but in past years. In the department of bacteriology, living and growing specimens are to be observed from day to day, mounted with special reference for exhibition and demonstration to classes. All of the necessary equipment for this department is also in working order, manufactured in various styles and arranged in the best manner for exhibition. The operating surgeon and gynecologist will also see the identical furniture and equipment of the best operating rooms in Germany, with photographs and plans of hospitals. The pathologic department is, as we should expect, very rich. The specimens are well described in a catalogue, which will be furnished the student on application. Although other exhibits are much more brilliant and, upon the first view, more attractive, the bibliographic exhibit is perhaps the richest of all of the exhibits of the German universities. In medicine this exhibit is naturally very large and choice, and will well repay a careful and critical study, in spite of the fact that the three or four great libraries of the United States possess much of it on their shelves. Such universities and colleges as are entitled to this consideration may, during the progress of the Exposition or soon afterward, receive a handsomely printed account of the exhibition of the German universities prepared especially for this occasion. This series of handsome quarto volumes, of which but one volume has appeared, will be a lasting monument of this splendid educational work that Germany has so well accomplished.

In the gallery of the Liberal Arts Building the camp-followers of medicine have made grand exhibitions, which will attract much attention. Every-

one will be interested in the exhibition of the manufactures of optical, chemical, and physical instruments. These exhibitions will be found in the departments of the various foreign countries and in the north gallery of the Liberal Arts Building. The exhibition of the Swiss instrument-makers is, however, on the first floor in the Swiss section. Pills, powders, surgical instruments, and office appliances are elaborately exhibited in this gallery.

All appliances relative to public and domestic hygiene, to charities, correction, and reformatory institutions, are exhibited in the south end of the Ethnological Building. Here are to be found the exhibits of the principal hospitals. Special attention should be given to the exhibits of the Johns Hopkins Hospital and the Boston City Hospital. Much valuable information for the hospital man will be obtained from these exhibits, and hospital wardens and managers will here find a great many valuable hints in hospital management and equipment.

The State Board of Health of Massachusetts has made one of the most attractive and instructive exhibits, and here the physician will receive valuable help in his study from the courteous attendants, all of them officers of the Board. This valuable exhibit is one of the most suggestive in the line of life-saving. A study of the work of the various charitable and reformatory institutions, whose attractive exhibits fill much of this building, is urged upon all physicians, whether their interest has been already aroused by practical study of these subjects or not. Attention is called to the exhibit of the Philadelphia Children's Aid Society, which has done such marvellous work in providing country homes for destitute children, and thus not only added much to life and happiness, but aroused alarm and consternation in the ranks of professional charity-mongers.

QUARANTINE CHANGES.

WITH the stroke of midnight on June 30th, the power of the Philadelphia Board of Health over maritime quarantine was terminated by law. This power has been exercised for almost a century. The present law, which takes the form of a supplement to the act of 1818, would fill several pages of THE NEWS, and represents substantially three influences. The agitation was begun several years ago by residents and property-owners in the neighborhood of the present quarantine-station to secure its removal. This influence was insufficient alone, but the continual disputes between the shipping interests and the local Board of Health last summer led to an effort on the part of the former to restrict this local control over quarantine. Then the developing sentiment in favor of National quarantine was accepted by both of the interests named as a satisfactory solution of the difficulty, and consequently the present law exhibits clearly concessions to all three views. The removal of the Lazaretto from Tinicum township must occur not later than July 1, 1895, and the conditions under which a new station is to be located are so hedged that it will be impossible to select any spot on the mainland of Pennsylvania. The control of quarantine-management is given to a board of seven persons, the exact function of which will only be shown by experience. In the constitution of this board, two non-official bodies, the College of Physicians of Philadelphia and the Maritime Exchange, have a voice, each appointing a member. It is probable that the bill could not have been passed without this concession to the latter organization; yet in spite of the respect due these two bodies, one eminently honorable in professional aspect and the other eminently representative of the business community, the policy of allowing public office to be filled by them is open to discussion.

While the bill, perhaps, creates a sinecure position, in that it gives the Quarantine Physician such liberal assistance that he is practically relieved of actual boarding-duty, it is to be commended for abolishing the double-headed system by which the Port Physician and the Lazaretto Physician took turns, so to speak, at the duties. The useless office of Quarantine Master is also abolished, as is also all payment of fees to the officials, a reform that is highly commendable.

The most important feature of the bill, however, and one that does not seem to have attracted much attention, is the provision made for the substitution of National for State quarantine. It is, we believe, the first act of State legislation, at least in the eastern United States, that provides definitely for this reform. The act empowers the Govenor to suspend the whole State system whenever he is satisfied that an efficient quarantine is maintained by the Federal authorities. That such a quarantine will before long be maintained, if it is not already, cannot be doubted, and it will be a notable reform when a single service uniform throughout all ports is established.

It is not unlikely that at the next session, the Legislature will see its way clear to a complete abolition of all maritime quarantine laws, and the relegation of the State and city health-authorities to their more appropriate functions of supervising local sanitary conditions. The National Government is abundantly able to take care of a maritime inspection.

PULSATING PLEURAL EFFUSIONS.

To MACDONNELL is due the credit of having, in 1844, for the first time directed the attention of the profession to pulsation as an occasional phenomenon in pleural effusions. A diligent search has discovered in medical literature only two cases reported prior to that date: the first of these was that of BAILLOU, published in 1640; the second that of PELLETAN, published in 1810.

WILSON and ESHNER (see p. 57 *et seq.*) have been able to collect up to the present time only sixty-eight cases, of which three occurred in the course of four years in the hospital services of the former. In fact, only one single observer, COMBY, who reports four cases, has seen a greater number. MACDONNELL, CHVOSTEK, RUMMO, and LIGHT have each reported three cases. Of the sixty-eight recorded cases, nineteen have come under the observation of six observers. These statistics warrant the belief that pulsation as a phenomenon in pleural effusions is far more common than is indicated by the number of cases placed upon record.

To encounter a case of this kind appears to increase the probability that the observer will encounter other cases anon. The explanation of this fact may lie in the law frequently commented upon by hospital physicians and surgeons, that curious and unusual cases are likely to run in series, or, and this is more probable, in the fact that the study of a condition at once so curious and so rare as the pulsation of a pleural effusion places the clinician keenly upon the alert for the recognition of new cases of the same kind; yet the phenomenon is so striking that it is difficult to understand how it could be overlooked in any ordinarily careful clinical examination.

This condition is clinically important as leading to closer study of the mechanical factors in pleural effusion and as furnishing a striking example of an unsolved problem in clinical pathology, for no one of the theories hitherto advanced, nor all of them together, as PROFESSOR WILSON has pointed out, are adequate to explain the occurrence of pulsation in certain rare instances of pleural effusion, and its absence in by far the greater majority of such cases.

EDITORIAL COMMENTS.

Syringomyelia and Leprosy.—The recognition of syringomyelia as a distinct clinical entity is of quite recent date. The commonly accepted view of its pathology is that the lesions depend upon a primary defect of development, owing to imperfect union of the lateral halves of which the spinal cord is constituted, with the formation of a condition known as gliomatosis, in sequence upon which, as a result of degenerative processes, cavities are formed in the spinal cord. The symptoms naturally vary somewhat with the situation of the lesions, which are, however, most common and most extensive in the cervical region of the cord. The symptom-complex described a number of years ago by Morvan, a French provincial physician, and known by his name, presents some features that suggest a relation with syringomyelia, and has actually been designated syringomyelia of Morvan type. Our knowledge of the morbid anatomy of Morvan's disease is, however, not sufficient to permit of an ultimate acceptation of this view. More recently an effort has been made to show that Morvan's disease and syringomyelia are but masked forms of leprosy, and it must be admitted that the two types of disease present certain superficial points of resemblance, as well as certain points of difference. As matters stand at present, and in the absence of conclusive evidence to the contrary, the three affections must be considered as distinct. In confirmation of this position, PITRES and SABRAZES (*Archives Cliniques de Bordeaux*, 1893, p. 232, No. 5) have reported three cases of syringomyelia, in one of which examination of a portion of nerve excised from the affected part, and in the other two post-mortem examination of sections of the spinal cord, failed to disclose the presence of the bacilli of leprosy. As negative evidence this can have but relative value. Taken, however, with the other facts in the case, it will go far to strengthen the prevalent view of the disease and its congeners.

Work and Rest.—In New York there lately retired from active duty a veteran editor who, in leaving his post, remarked that for forty-four years he had worked incessantly—without a single vacation. Physicians are accustomed to think of themselves as the hardest working men of the community, and this, so far as an equally large body of men is concerned, is certainly true. But there are few that can rival the service of the New York editor. A great physician of Philadelphia kept every office-hour for ten years. The peculiarity of the physician's work is that, like woman's, it is never done. The editor, the lawyer, can also have regularity in their lives, and when the day's labor is done, it may be more or less shut out of thought. Not so the doctor; the conscientious one, at least, cannot shut himself away from his patient, and the haunting sense of responsibility is always present, often like an incubus. Then, too, the enormous progressiveness of his science rouses the

ceaseless attention and keeps the energies alert in order to be abreast of the advances made every day. But it was our purpose to say that the New York editor, and those physicians who, like him, never take a vacation, are wrong. Better results would be attained with the rest than without it. It is useless to urge this truth on professional attention; useless, because every physician knows it—and ignores it! Lawyers can take care of their own property, as well as that of their clients, but as regards their own health, physicians are the most foolish of men. In accordance with the therapeutist's absurd practice, THE NEWS (which never rests) advises its readers to "throw physic to the dogs," and to take a month or two of rest each year. All need not go at the same time, so the public need not suffer. The railway and steamship have put all climates within a few days' reach.

Medicine and Art.—It seems worthy of comment that among the thousands of pictures at the Columbian Exposition, illustrative of the art and customs and types of every country and calling of the world, there are not half-a-dozen pertaining to medicine. The query arises, Is this because of any inherent qualities of medical ideals and practices that do not lend themselves to esthetic treatment? Every aspect of life, death, suffering, and wrong that the world has known is portrayed by the painter or sculptor, all save the one aspect of illness and the medical saving of life. The heroism of the men who kill is found pleasing, but not the heroism of those who bring life out of death. Perhaps this illogicality rests upon the larger one of the contemptuous and contemptible opinion of medicine in the minds of the world. Inexplicably, unconsciously, but also inevitably, the worldling rates the great physician immeasurably below the great general, statesman, or lawyer, and with the large majority there even arises a tinge or a downright dyeing of disrespect, when medicine comes into thought. As to the pictures again, the impracticability of the art-treatment of medical subjects is sadly illustrated by the examples at Chicago. Seligmann's "Billroth's Clinic" is well known to many through a cheap reproduction. Lessing's "The Sick Bed," and Jimenez's "Salle d'Hôpital, are hardly worth passing notice, and the treatrical clap-trap of Heyl's "Before the Section" (*sic*) is wholly execrable. All are simply prosaic recitals, none being touched with the divine fire of art. Are such things necessities or misfortunes—errors of the artist or inherent in the subject?

Scientific Sanitation in the Croton Watershed.—As a sample of the kind of intelligence and sanitation to be expected of politicians, Dr. Roosevelt found that because a cesspool drained into a running stream of Mount Kisco, the stream itself was ordered closed or dammed, with no provision whatever for the water to escape. The result would have been, first, a flooding of the cellars of the houses in the village with the sewage, and when the laws of gravitation could no longer be withstood, a breaking of the infected floods and general contamination. The closing of the cesspool, and the laws of hydrodynamics, never occurred to the wonderful Daly.

After an examination of the Croton watershed and the "sanitary" measures lately instituted there, Dr. Roosevelt thus concludes his report to the Academy of Medicine: "As matters stand now the people of New York are without any efficient protection against polluted water; and in this State we are compelled to face a summer which may bring cholera to our shores, and which certainly will close with the regular autumn outbreak of typhoid fever. The responsibility for our defencelessness rests with those who refused to permit the enactment of sensible laws."

A Commendable Departure.—In view of the recognized difficulty that sometimes attends the diagnosis of diphtheria and its discrimination from other similar or allied diseases, and of the direful consequences that may attend error in diagnosis, the action of the Board of Health of the city of New York in offering to make a bacteriologic examination in doubtful or suspicious cases, must be commended as a wise and progressive departure. The Board has designated a number of conveniently situated depositories, including its own laboratory, in whose care it has placed culture-tubes, which (with printed instructions) may be obtained and inoculated by the physician himself or, if he desire, by an official of the Board and again returned. The tubes are collected daily, and reports issued within twenty-four hours. The principle of application was already enunciated last fall in both this city and New York in connection with the bacteriologic examination of the stools of cholera-suspects. It marks a new era in the usefulness of Boards of Health, and is worthy of extension and universal adoption.

Kyphosis Bicyclistarum.—Every one has noticed, and many have wondered at the stooping posture of the bicycle-rider. The question aroused in the mind of the physician by this posture is whether "cycling" is a very praiseworthy method of athletics if it result in such contraction of the chest and unnatural bending of the spinal column. It would also appear that the muscles of the leg and hip are over-exercised, while those of the trunk and arms are left unexercised. A permanent posterior dorsal curvature has been noticed in many riders, and this has been given a distinctive name—*Kyphosis Bicyclistarum*—a name that of itself should be a warning to the enthusiast, even if the fact have no terrors. Those who are not deterred either by the name or by the possible deformity, and especially if young, and while the shape and structure of the spinal column have not been fixed by adult age, should correct the tendency toward improper curvature by complementary and counteracting forms of exercise.

Progress in Medical Education.—President Eliot, of Harvard University, in his speech to the alumni on commencement day, announced that the Law School had raised its standard by requiring, after the year 1896, the degree of A.B., S.B., or Ph.B., as a prerequisite for admission to its courses. There is already such a requirement in the Divinity School; and President Eliot expressed the hope that hereafter it would be adopted for the medical school.

But why should there be only the expression of a hope? Why should medicine lag behind other professions, in elevating the standard of entrance and of education? And why should the United States be behind every

other civilized country in this matter? Simply the power and the selfishness of proprietary medical schools. Nothing else!

Suicides in France, with an almost stationary population, have increased more than 21 per cent. in ten years. In 1891 there were 8120, in 1881 only 6751. The difficulty in getting poison, on account of stringency of the laws, has thus not prevented suicide, but has made more violent methods customary. Over 3000 killed themselves by hanging, and over 2000 by drowning, whilst there were only 183 by poison.

A Porter's Foot-race.—Jean Labasse, a French porter, recently carried a bag of sand weighing 220 pounds a distance of nineteen miles in fourteen hours, beating his competitors by several hours' time.

REVIEWS.

A STUDY OF THE ARTEFACTS OF THE NERVOUS SYSTEM. By IRA VAN GIESON, M.D. New York: D. Appleton & Co., 1892. (Reprinted from the New York Medical Journal.)

THE author has made a careful study of the changes, both gross and minute, produced in the spinal cord by injury during its removal from the body, and in its prepartion for microscopic study. He has compared the lesions produced by bruises with the conditions found in the thirty-one reported cases of malformation of the cord, excluding, of course, monstrosities, and concludes that but six of them are instances of genuine heterotopia. In the remaining twenty-five cases he claims that the lesions were caused by disease, post-mortem bruises, or both. It is noteworthy that the genuine cases were those early reported. The lesions artificially produced are reduplications of the gray matter, irregularly-shaped horns, canals, cyst-like spaces, and misplaced gray matter. They can be distinguished from true heterotopia by making serial sections, when it will be found that they are caused by areas of tissue having been forced upward or downward to other levels. The paper is admirably illustrated It should be read by all interested in the pathology of the nervous system.

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THROAT, NOSE, AND NASO-PHARYNX. By CARL SEILER, M.D., Instructor in Laryngology, and Lecturer on Diseases of the Upper Air-passages, in the University of Pennsylvania, etc. Fourth edition, thoroughly revised and greatly enlarged. Illustrated with two lithographic plates, containing ten figures, and 107 engravings. 12mo, pp. 414. Philadelphia: Lea Brothers & Co., 1893.

THE mere fact that this work has reached a fourth edition is sufficient evidence that it fills a want long felt by "average general practitioners." As a book of quick, ready reference it has no rival in the field of laryngology, and the directions are usually such as to be readily carried out, even by comparative tyros in the work. The seeker after an exposition of the best and newest facts from the standpoint of the specialist, will, however, meet with disappointment, the book dealing rather with the pathology and therapeutics of several years ago than with those of the present. The first five chapters deal with the anatomy, physiology, and methods of examination of the upper respiratory tract, and are most clear and practical, and are also excellently illustrated. The remaining fourteen sections treat of the various diseases of the larynx, pharynx, and nose, and give a fair outline of the general principles of pathology and treatment.

Hypertrophic Catarrh is quite fully discussed, and this chapter is the best in the book; Atrophic Rhinitis, on the other hand, is one of the worst, hardly any of the newer methods of treatment being given, and the old and unscientific nitrate of silver formula of Bresgen being still lauded. Adenoid Growths of the Pharyngeal Vault are disposed of in little over a page, and the treatment suggested is hardly a safe one to trust to unskilled hands.

This edition will probably be eagerly welcomed by those for whom it was written, and will be a useful addition to libraries of students and general practitioners.

CHOLERA. By G. ARCHIE STOCKWELL, M.D., F.R.S. In two volumes. The Physician's Leisure Library. Detroit: Geo. S. Davis, 1893.

ONE arises from a reading of these two volumes with a sense of commiseration for their author, from a feeling of consideration that one is taught to hold for the senile, no matter how silly or absurd their word or act. It only seems remarkable that such a work as this should find issue in the last decade of the nineteenth century. Doctor Stockwell has added nothing to our knowledge, while his presentation of antiquated and exploded notions and his attack on current doctrines can have no influence upon the tendency of modern thought. He starts out with the view that the symptoms of cholera are dependent upon intoxication, the effects of which are especially expended upon the nervous system. He frankly confesses ignorance of the cause of the disease, denying the pathogenicity of the cholera-bacillus of Koch, and would direct his treatment to the control of the symptoms. In evidence of the character and spirit of the work, we shall make several quotations. Thus, in speaking of the parallelism between malaria and cholera, he makes the astounding statement that "The contracted vessels of the skin and the rigors associated with the cold stage in malaria are evidences of hypertrophy and hyperesthesia of vasomotor nerves." Pasteur, to whom the whole scientific world recently, on his seventieth birthday, paid homage, he characterizes as a "visionary, whose utterances have never been worthy of dependence, who is utterly devoid of physiological or other medical knowledge, and who, moreover, is not even a reputable chemist." Dr. Shakespeare's report on Cholera, presented, as special Commissioner, to the Government of the United States, he says "was compiled by an ardent bacteriologist, who, while gathering everything favorable to his view, carefully excluded all evidence calculated to invalidate." We have but to add that the book is calculated only to do harm, and that it is sedulously to be left alone.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology, and Dermatology. By John M. Keating, M.D., LL.D., Judson Daland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., David W. Finlay, M.D., F.R.C.P. Volume I. Third Series. 1893. Philadelphia: J. B. Lippincott Company, 1893.

This valuable publication opens the third year of its existence with a remarkable and varied array of practical and interesting articles. Within its 361 pages are included fifty-one lectures, delivered by as many representative teachers, well known in their respective departments. To give even the names of subjects and authors would carry us beyond the limits of this review; while to consider the papers in such fashion as they deserve is quite out of the question. We have, however, only words of praise for the undertaking, and commendation for those engaged in carrying it out, and we venture to give expression to the hope of its continued success. This well-gathered collection of papers fairly reflects the consensus of medical opinion of the day, presenting as it does the views and practice of men actively engaged in the solution of the medical problems of their time.

The Hygiene of the Sick-room. A Book for Nurses and Others. Being a Brief Consideration of Asepsis, Antisepsis, Disinfection, Bacteriology, Immunity, Heating and Ventilation and Kindred Subjects, for the Use of Nurses and other Intelligent Women. By Wm. Buckingham Canfield, A.M., M.D., Lecturer on Clinical Medicine, and Chief of Chest Clinic, University of Maryland, etc. Philadelphia: P. Blakiston, Son & Co., 1892.

The scope of this book is indicated by the title-page. It is the outcome of a series of lectures before the Training School for Nurses of the University of Maryland.

The language of the author is clear and simple, while the information imparted is sufficiently full and accurate. The work should not only be of great assistance as a text-book in the training school, but the "intelligent women other than nurses," for whom the author writes will certainly be better able to protect their households and to assist the physician, after reading these pages. We are much pleased with the practical character of the work.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 56.)

Section on Ophthalmology.

Chairman: S. D. Risley, of Philadelphia.

In his address opening the meeting, the Chairman referred to the valuable work done by the section in previous years, and suggested that this could be still further improved upon by better preparation for the discussions, so that each scientific paper might bring out the experience and opinion of a large number of members of the section upon the subject which it discussed. In this way its published *Transactions* would come to occupy a merited position of authority. He suggested that each year a special subject should be chosen for discussion at the annual meeting, and a committee appointed to report upon it.

Later in the meeting, the Chairman's suggestion was adopted, and the subject chosen for consideration next year was "Methods for the Objective Measurement of Refraction," and the following committee appointed to report upon it: Dr. Edward Jackson, chairman; Dr. Swan M. Burnett, Dr. H. V. Würdemann, Dr. J. A. Thompson, and Dr. H. Gifford.

Pannus and Granular Lids.

Dr. J. A. Lydston, of Chicago, reported very satisfactory results from the use of a preparation of the digestive ferment of *caricaya papaya*, in powdered form, mixed with boric acid and dusted upon the affected surface, in severe pannus, when the cornea is the seat of thick vascular granulations. Preparations of pepsin had proved inefficient, but he had some hope that pancreatin, with which he is now experimenting, might be found of more value.

Dr. C. B. Blubaugh, of Parkersburg, W. Va., had given up strong stringent applications, such as silver nitrate and copper sulphate, in the treatment of granular lids. In cases with well-marked granulations, he scraped the surface of the lid with curets made specially for the purpose, and in addition employed milder astringents and soothing applications.

Phlyctenular Ophthalmia.

Dr. Dudley S. Reynolds, of Louisville, called attention to the frequent confusion of this disease with the ocular manifestations of hereditary syphilis. The diagnosis of syphilis is not justifiable from the ocular disease alone, but must be supported by well-recognized symptoms outside of the eye and its appendages. In the treatment of phlyctenular disease he regarded constitutional and hygienic measures as most important.

Methyl-violet in Eye-disease.

Dr. F. B. Tiffany, of Kansas City, who had originally translated Stilling's article upon pyoktanin, urged that in spite of the numerous disappointments with it, it had some value in the treatment of certain eye-diseases.

Foreign Bodies in the Eyeball.

Dr. W. H. Wilder, of Chicago, discussed the use of the electro-magnet, and reported a series of cases. He had collected altogether the reports of 258 cases, the results of which were good in 58, moderate in 40, the preservation of the eyeball without sight in 37, and failure in 123. These statistics probably show too large a proportion of cures, as a larger proportion of the successful than of the unsuccessful cases is reported. A trial of the method should be made, however, in every favorable case.

Dr. W. B. Johnson, of Paterson, N. J., reported a series of cases in which foreign bodies were retained in different portions of the eyeball, sometimes for several

years, without causing disturbance, and even with preservation of good vision. He believed that if the foreign body does not set up violent inflammation, opportunity should be given for the eye to become quiescent rather than to immediately remove it. The danger of such a course is in the risk of involvement of the second eye when the patient is not under skilled observation. On this account, the preservation of the eye should not be advised if the foreign body is probably located in the vitreous.

Sympathetic Neuritis after Evisceration.

DR. F. C. HOTZ, of Chicago, reported a case in which this had occurred, although the sympathizing eye ultimately recovered entirely. He had made measurements of the movement of artificial eyes applied after enucleation, evisceration, and over an atrophic eyeball. The extent of movement was substantially the same in each case, so that the principal argument in favor of evisceration, that it gives a better foundation for the artificial eye, is not supported by the facts; and, as evisceration causes more pain and is attended with slower healing, and on account of the danger of such complications as had been reported, it was regarded as in every way inferior to enucleation of the eyeball, when some such operation is indicated.

Meningitis following Enucleation.

DR. S. D. RISLEY, of Philadelphia, reported a case in which the eye had been removed for pan-ophthalmitis, and the patient apparently recovered, being discharged at the end of two weeks. A week later there was some suppuration of the stump, and this was followed by symptoms of meningitis and death. The patient had been from the outset in extremely bad physical condition, and there was doubt as to whether the meningitis had arisen from the inflammation of the eye, or whether both of these had a common cause.

Intra-ocular Injections of Antiseptic Solutions.

DR. G. E. DESCHWEINITZ, of Philadelphia, found that such injections always caused permanent lesions of the retina or vitreous, or both; and that they failed to cure or prevent suppurative inflammation produced in the eyes of rabbits. In one case they seemed to bring about a cure in the eye of a dog.

Dendritic Keratitis.

DR. W. H. WILDER, of Chicago, believed that cases of branching corneal ulcer, although described as instances of an independent affection, all belong to the class of herpes of the cornea, and are due to constitutional causes, malarial poisoning being prominent among them. Local treatment seemed to have little effect, except cauterization of the ulcer with carbolic acid, which produced a favorable change in one or two cases.

Brain-tumor with Optic Neuritis.

DR. E. P. MORROW, of Canton, Ohio, reported two cases with autopsies, in which violent optic neuritis, or choked disc, was the only positive sign of organic brain-disease, and furnished the first definite basis for diagnosis. In one of these a glioma, two inches long by one inch in diameter, was found at the base of the right temporal lobe, and in the other case a soft glioma was found involving a considerable part of the upper surface of cerebellum.

Optic-nerve Disease with Typhoid and Other Fevers.

DR. J. A. WHITE, of Richmond, Va., had met many cases of optic atrophy following so closely on typhoid and other fevers that it seemed clear they were the result of such diseases.

The meager literature on the subject proves only that it has not been carefully investigated. Inquiry among American ophthalmologists showed that many of them had encountered such cases, and that such affections are more common than has been supposed.

Dr. White reported one case of optic neuritis commencing at the end of the third week of an attack of typhoid fever, lasting about three months, and ending in complete recovery. A brother of this patient had suffered in a similar manner after typhoid fever some years previously.

Another case was one of atrophy, the sight having become defective during an attack of typhoid fever four months before and continuing to grow worse in spite of improved general health. Increasing doses of strychnine, up to one-fifth of a grain three times a day, produced very marked improvement in his vision.

In another case complete blindness followed remittent fever of malarial origin. Under increasing doses of potassium iodid, followed by strychnine, perfect recovery was secured within four months.

Glaucoma.

DR. L. F. LOVE, of Philadelphia, reported a series of cases of this affection, all giving the history of causation by some shock to the nervous system. He pointed out the importance of general treatment, especially the use of strychnine.

DR. H. GIFFORD, of Omaha, called attention to the value of making a small puncture in the sclerotic to diminish the tension of the eyeball before attempting iridectomy or other operation for glaucoma.

Diseases of the Lachrymal Passages.

DR. H. GRADLE, of Chicago, divided cases into two classes: those in which the obstruction and lachrymation were intermittent, occurring on exposure to wind or dust, or following eye-strain; and for which the prognosis as to rapidity and permanence of cure is comparatively favorable; and, second, those cases in which the weeping is continuous, indicating a permanent source of irritation within the nose and in the tear-passages, in which the prognosis is less favorable. He recommended the use of electroloysis in the cases of stricture of the duct in which a probe can be made to enter without undue force.

DR. C. A. WOOD, of Chicago, insisted on the necessity of recognizing the exact seat of a nasal obstruction. In the treatment, he used, for the purpose of irrigation, a reservoir situated about ten feet above the patient, connected by a flexible tube with the point introduced into the lachrymal passages. He would not practise slitting the canaliculus, unless there was good evidence that the patient would persist in the treatment until a complete

cure was accomplished. When probes are to be used, he teaches the patient to introduce them for himself, in order that they may be used more frequently and their employment be properly persisted in.

Signs of Myopia.

DR. B. A. RANDALL, of Philadelphia, discussed the curved reflex at the nasal side of the disc, described by Weiss. Though frequently present in other cases, he thought that it should be regarded as having some significance with reference to increasing myopia.

Muscular Anomalies and Squint.

DR. A. R. BAKER, of Cleveland, Ohio, reported a case of very persistent spasm of accommodation temporarily relieved by tenotomy of the external recti muscles.

DR. T. F. MURRELL, of Little Rock, found for heterophoria or latent squint, the rod-test to be the best yet proposed; but that no one test could be depended on alone. No eye subject to painful vision could be considered completely examined until tested as to the muscular balance. Imperfect muscular balance is extremely common, but frequently requires no special measures for its relief. It is most common and most difficult to relieve in neurotic patients.

DR. J. A. THOMPSON, of Kansas City, thought that operations for the correction of convergent squint, when considered in the light of ultimate results, are among the most difficult, uncertain, and unsatisfaciory in ophthalmic surgery. Glasses sometimes give relief in young children, but this is exceptional, and he is very loath to prescribe them for such patients unless there is considerable probability that they would bring about the desired result. When operations are resorted to, he thought that the operation of advancement, which should include the capsule as well as the tendon, is to be preferred to simple tenotomy.

DR. EDWARD JACKSON, of Philadelphia, presented a modification of the rod-test, combined with the rotary variable prism for the measurement of heterophoria.

DR. J. E. COLBURN, of Chicago, reported a series of cases in which squint in a portion of the visual field, permitting binocular vision only when the head was held in some peculiar position, had been relieved by appropriate tenotomies. These cases are liable to be misunderstood and subjected to treatment, sometimes operative, for wry neck, or spinal distortion. The readjustment of the eye-muscles, allowing comfortable binocular vision with the head in the normal position, is all that they required.

Orbital Growths.

DR. J. A. WHITE, of Richmond, Va., reported a case of melanotic sarcoma of the choroid, and one of fibrosarcoma, filling the orbit, both requiring enucleation of the eye. He also gave the further histories of some cases in which the removal of malignant growths had been reported a year before. In one case of melanotic sarcoma of the choroid, there had been no recurrence in the orbit, but some obscure liver-trouble, probably of metastatic development. A malignant fibroid of the orbit had remained quiet for three months, then recurred; was again removed, but incompletely; and the patient died from exhaustion.

In a case of tuberculous disease of the orbit, another growth had to be removed, and, in a case of fibroma extending back to the sphenoidal fissure, and expected to recur, no recurrence had taken place after eighteen months.

DR. R. F. LEMOND, of Denver, reported two cases of osteoma of the orbit. In one the growth was completely removed; in the other incompletely removed.

DR. H. KNAPP, of New York, said that these tumors usually spring from the cavities adjoining the orbit, and tended, if undisturbed, to involve the cranial cavity. They ought to be removed as early as possible by enucleation of the growth, working through the healthy bone-tissue surrounding it.

Cataract.

DR. H. V. WÜRDEMANN, of Milwaukee, called attention to the value of cemented bi-focal lenses after cataract extraction, giving the patient both near and distant vision without change of glasses. To avoid the apparent displacement of the floor, which patients complain of, he resorts to decentering of the lenses.

DR. B. BETTMAN, of Chicago, reported additional cases of artificial ripening of the immature cataract by his method of direct trituration of the lens without iridectomy. He has found the procedure perfectly safe and efficient.

DR. F. T. SMITH, of Chattanooga, reported a case of successful cataract extraction in a negro woman said to be 116 years old. The operation was followed by great improvement in the general mental condition.

Dislocation of the Lens.

DR. L. H. TAYLOR, of Wilkesbarre, reported a case in which both crystalline lenses were dislocated upward and outward. All of the cases of traumatic dislocation that he had seen had shown the lens displaced downward, and, therefore, he regarded this case as one of congenital displacement.

Hypertrophic Conjunctivitis.

DR. C. WILLIAMS, of St. Paul, prefers this name to trachoma, as indicating the condition present. He favors simple applications and employs a solution of mercuric chlorid of such strength as not to cause pain lasting more than five minutes. It is important to guard against implication of the iris, and, in cases in which this occurs, to use a mydriatic early and freely.

Albinism.

DR. G. M. GOULD, of Philadelphia, reported eight cases occurring in two families, neither of which gave any history of intermarriage, or of a similar defect in the eyes of ancestors. The patients showed in most respects excellent physical development. Males and females were affected, and there were intermediate children, not albinoes. He believed the transparency of the iris to be the significant condition, and the absence of pigmentation elsewhere to be of less importance. Nystagmus he regarded as the effort of healthy nerve-centers to compensate for the faulty ocular apparatus, and to locate undefined images. The partial closure of the lids, to aid in the exclusion of light, by pressure upon the eyeball caused the high astigmatism, usually with hyperopia, which these cases present. The photophobia, amblyopia, high degrees of astigmatism, and nys-

tagmus seem therefore to be due to the non-opacity of the iris. The practical means of relief are the correction of the ametropia, and the use of an opaque diaphragm with a central opening, to shield the eye from light that otherwise would be admitted through the transparent iris and lids.

Prevention of Blindness.

DR. L. HOWE, of Buffalo, urged the importance of legislation for this purpose. The census of 1890 showed the number of blind to be 50,411, an increase of three per cent. over the preceding decade. Of these, probably 5000 were blind from neglect in early childhood. Laws compelling midwives to report all cases of sore eyes in infants under their charge had been passed in a number of States, but some of them were imperfect, and the adoption of an efficient law should be urged upon the Legislatures of States which had not yet considered the subject.

The following committee was appointed to take charge of the matter: Dr. L. Howe, Chairman; Dr. G. M. Gould, Dr. J. L. Thompson, Dr. Henry Gradle, Dr. G. C. Savage.

Classification of Eye-diseases.

DR. E. JACKSON, of Philadelphia, urged that the statistics of different hospitals would have greatly increased scientific value if the same system of classification were adopted in all.

A committee was appointed to consider the subject.

Scale for Measuring the Strength of Prisms.

DR. S. L. ZIEGLER, of Philadelphia, presented such a scale, with both horizontal and vertical graduations, which he has found very convenient for ascertaining the strength of prisms, either simple or combined, or combined with lenses; or the amount of heterophoria.

Officers for the Ensuing Year.

The officers chosen for the next year are:

President—Dr. A. R. Baker, Cleveland, Ohio.

Secretary—Dr. L. H. Taylor, Wilkesbarre, Pa.

The Executive Committee consists of the former chairmen—Drs. S. D. Risley, of Philadelphia; J. L. Thompson, Indianapolis; and F. C. Hotz, Chicago.

NEWS ITEMS.

Work of the Health Department of New York.—The amount of work done in three months by the New York Health Department appears from its last quarterly report, which has just been printed. There were 167,394 inspections made and 6525 complaints attended to by the inspectors. It is evident from this that the inspectors do not wait for complaints, but that they are continually investigating dwellings and other buildings of the city. Over 2000 premises were reported for defective plumbing and over 1000 for plain filth.

Over 200 tons of fruit were condemned and seized. This includes over 60 tons of oranges and 90 tons of bananas. Over 25 tons of wine were condemned, and over 165 tons of beef, veal, sheep, and hogs.

About 500 tons altogether of food materials were taken by the department from people who intended to sell them. This mass of improper food would have been sufficient of itself to cause a great amount of sickness and many deaths. It was to be sold chiefly in the poorer quarters among the tenement-houses and in the Polish-Jewish neighborhood around Hester and Essex Streets. On account of the low price at which it was held it would have found ready purchasers.

There were removed from the streets over 2500 dead horses, and over 2000 dead calves, besides dead sheep, cows, and several thousand dead cats and dogs.

During the quarter there were reported 5485 cases of contagious diseases, almost all of them scarlet fever, measles, or diphtheria. Over 16,000 pieces of infected goods were received. About a third of them was destroyed; the others were disinfected.

Since the city hospitals for the care of patients sick with contagious diseases have been completed the number of cases of contagious diseases has decreased. The proportion of deaths to the number of cases has also decreased. The hospital mortality from scarlatina was less than 11 per cent., and from diphtheria less than 18 per cent. The higher death-rate from diphtheria was caused by the deaths of children under five years of age. Only the worst and most dangerous cases of contagious disease are taken to the hospitals for isolation and treatment, so the death-rate is higher there than throughout the city, but even with this selection the mortality from typhus fever only reached 34½, measles 21, and scarlet fever 5 per cent. There is one case of leprosy at the Riverside Hospital on North Brother Island. It is noticeable that three-fifths of the cases of typhus fever are in foreign-born persons, and that the death-rate is higher among such cases than among the American-born patients. About one-fourth of the cases of typhus fever came from one house, 34 Bayard Street. The lodgers were disinfected, as was also everything about the place. A complete list is printed of the typhus patients with their names, ages, dress, occupation, and nativity.

The number of deaths in the city during the quarter was 11,844, and the death-rate 25.37—lower than for three of the preceding four years.

The cause of the greatest number of deaths was pneumonia, 2389; next to that pulmonary tuberculosis, 1381. None of the other causes of death exceeds a thousand. There were 95 deaths from alcoholism, 160 from old age, 348 from accident, 8 from homicide, and 64 from suicide.

Dr. John C. Hall, a well-known alienist, died on July 4th, in an attack of angina pectoris. He was graduated from the University of Pennsylvania in 1868, and became a resident physician in the Philadelphia Hospital. In 1878 he was made Superintendent of the Friends' Asylum at Frankford, a position that he held up to the time of his death.

Oscar Israel, for many years an assistant of Virchow's, has been made an extraordinary professor of pathologic anatomy in the University of Berlin.

Prof. Renvers has been designated as the successor of Guttmann, recently deceased, as the director of the medical department of the Hospital Moabit at Berlin.

v. Eiselsberg, one of the assistants at the clinic of Billroth, in Vienna, is in contemplation as the successor at Utrecht of Salzer, recently deceased.

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ORIGINAL ARTICLE.

SYRINGOMYELIA.

BY LEO NEWMARK, M.D.,

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IN a recent work[1] on diseases of the nervous system it is stated that "it is now quite a fashion in this country to report so-called cases of syringomyelitis." It it be a fashion it is one that seems to have but few votaries in the United States. For, since the publication of the first case by Dr. Starr,[2] certainly not many more than a dozen American cases have been recorded. The paucity of our literature on syringomyelia forms a striking contrast to the voluminous records of European authors on the subject. Schultze, Déjerine, Charcot, Hoffmann of Heidelberg, and many others have been enabled to base their studies of this disease on such abundant material as to justify the assertion that it is scarcely less common than disseminated sclerosis. Hoffmann alone recorded five cases in 1891,[3] and recently, in a very elaborate essay,[4] added a report of no fewer than eighteen.

Assiduously as syringomyelia has been studied for several years past, the interest in it does not seem to flag. Its pathology and the relations of the structural changes in the cord to the clinical manifestations are still subjects of laborious research. The diagnostic difficulties arising from its resemblance to certain other diseases render its study especially important. The question of its identity with Morvan's disease has not yet been answered to the satisfaction of all; and its resemblance to anesthetic leprosy has called forth the sensational assertion that syringomyelia and anesthetic leprosy form "a single morbid entity," varied only by climate or the hygienic conditions of the patient.[5]

In view of the sustained interest in all that concerns this remarkable malady, the report of the following case may not be unacceptable.

[1] "A Treatise on Nervous and Mental Diseases," by Landon Carter Gray, M.D., 1893.

[2] American Journal of the Medical Sciences, May, 1888.

[3] Volkmann's Sammlung, 1891, No. 20.

[4] Deutsche Zeitschrift für Nervenheilkunde, Bd. iii.

[5] Zambaco: Gaz. hebd., 1891. Quoted by Marestang, Revue de Méd., 1891, p. 783. In La Semaine Médicale, 1893, June 10, Zambaco maintains that not only Morvan's disease and syringomyelia, but also sclerodermia, sclerodactylia, aïnhum, morphea, and local asphyxia with symmetrical gangrene, are "nothing but varieties of one and the same prehistoric disease, old as the world, leprosy."

The patient, K. F., is an unmarried woman, twenty-five years old, a native of Boston, Mass., of Irish parentage, and resident in California since her second year. She presented herself at the San Francisco Polyclinic on the 13th of January last, with the statement that her hands were wasting, and added that she was insensible to pain or heat in the upper extremities. The disease began about six or seven years ago with a prickling sensation ("like when the foot is asleep") in the right deltoid region; this sensation gradually descended to the elbow, and thence down the forearm to the wrist; it has never been present on the left side. The patient found relief from the distressing feeling by directing her companions to strike her on the fleshy part of the right arm, and the more vigorous their blows the greater was the relief. She did not cease to be troubled in this way until about a year and a half later; in the meantime she had continued her occupation as a seamstress. While engaged in sewing and ironing she often sustained injuries to her hands which, although severe, entailed no suffering, and thus attracted her attention to the impairment of her sensation. She often burned herself and did not notice it until it had been pointed out to her; once she put her hand into very hot water and scalded it, but suffered no pain. Her fingers finally became very sore, so sore that she thought "they must rot off," and some of the nails fell off two or three times. About four years ago she abandoned her occupation and has since then injured herself less. While undergoing electric treatment the regulation of the strength of the constant current was occasionally left to the patient by her physician, and there being no painful sensation to warn her, a large running sore formed in the palm of the left hand, which healed very slowly, but did not distress her. The disturbance of sensation preceded the wasting of the hands. The right hand wasted first; there was twitching in the fingers and especially in the thumb, in which there was a sensation "like the fluttering of a bird trying to escape." The right hand had wasted to its present condition when (about three years ago) the atrophy of the left commenced. The patient is often annoyed by a jerking of the left lower limb; the jerking consists in violent flexion of the thigh and extension at the knee; it occurs most frequently and is most violent when the patient is recumbent and, according to the testimony of the mother, during sleep. It sometimes occurs while she is sitting, and is then arrrested by standing. Fatigue after much walking intensifies the jerking. Occasionally there are cramps in the great toe of each foot, in which the toe is forcibly extended. Complaint is further made of pain at the back of the neck and in the palm of the hand.

Nothing was elicited indicating a family tendency to nervous diseases; but there seems to be a tuberculous taint, as the patient's father and sister and a maternal uncle are said to have died of pulmonary tuberculosis.

The patient is at present small and anemic. In both hands there is advanced muscular atrophy. The interossei are wasted, the absence of the interosseus primus being particularly noticeable. The thenar and the hypothenar eminences are flattened, the right thenar less than the left. The distal and middle phalanges are flexed, and the proximal phalanx is extended, whereby the "claw-hand" is produced, more markedly, however, on the right than on the left side. Flexion and extension at the wrist are preserved; but the atrophy of the intrinsic muscles of the hands is so great as to render the left hand practically useless and to seriously impair the use of the right. The advantage of the right hand over the left is due to the better condition of the opponens and the adductor pollicis in the former, and of the muscles in the right forearm. Abduction, extension and flexion of the thumbs are fair. Both forearms are thin, but the left is thinner than the right, the latter measuring 13 cm., the former only 12 cm. in the middle. The muscles of the upper arms and shoulder appear a little flabby, but not more so than might be expected from the patient's general nutrition; their functions are intact. The right arm measures 19.5 cm., the left 19 cm. around the middle. There is no atrophy of the trunk or of the lower limbs.

Fibrillary twitching is seen in the muscles on the inner side of the left forearm and in those of the hands; there is also a jerky tremor of the hands. As to the electric reactions, the muscles supplied by the musculo-spiral nerve react on both sides equally well and normally to direct and indirect galvanic and faradic excitation. The right median and ulnar nerves and the muscles of the forearm to which they are distributed respond fairly well but less promptly than the extensor muscles; in the same nerves and muscles of the left limb there is a considerable diminution of excitability by either current, without modal change, and the reduction of irritability is greater in the ulnar than in the median nerve and muscles. There is no typical reaction of degeneration in the small muscles of the hands; in accordance with what has been noted of the comparative preservation of motor power in the right thumb, contractions of the adductor and the opponens pollicis are obtainable by direct excitation or by excitation of their nerves at the wrist, with not very strong currents; in the other muscles of both hands the electric reactions are either greatly diminished or abolished.

The tactile, muscular, and stereognostic senses are preserved in all parts.

While the muscles of the upper extremities were being tested by faradism the patient gave no indication of pain even when strong currents were applied with a very small electrode. Other tests, however, disclosed that the analgesia was not absolute in these parts, deep punctures and strong pinches, particularly in the right hand and shoulder eliciting evidence of painful sensation. The analgesia is more profound throughout the left superior extremity than upon the right. It is most profound on the left side of the head (except a part of the face), on the left half of the neck and the left shoulder. It is slight, but still evident in comparison with the other side, on the median half of the left side of the face and on the left side of the mouth and tongue. The upper and lower regions of the chest are slightly analgesic, while the breasts are normal or nearly so. Ammonia held to the nostrils produces equal irritation on both sides. The analgesia in the hands is not as great as the statements of the patient would lead one to believe. The ulnar nerves are not sensitive to strong pressure at the elbows.

The insensibility to heat and cold coincides for the most part in distribution and degree with the analgesia. In the right hand it is less than in the left, and is far from absolute, although the impairment of the thermic sense is beyond doubt; but it is less than would be inferred from the history of the patient's experience. A piece of ice can be retained in the left hand almost indefinitely without causing discomfort, whereas in the right a stinging sensation of cold is announced after it has been held a short time. Water which was quite hot when applied to the right hand for the purpose of electric testing was not felt to be at all warm, whereas subsequently a test-tube filled with moderately warm water was distinguished from one filled with water of about 60° F.; and the distinction was made between the wooden handle and the metal part of a percussion hammer, when held in the right hand, by the temperature of the metal. The patient herself, however, when informed of the result of the tests, remains convinced of the insensibility of her hands to painful impressions, heat and cold, under ordinary circumstances. A piece of ice taken into the left side of the mouth is recognized as cold, but is immediately felt "several degrees colder" when shifted to the right side. An analogous difference obtains in regard to warm water. Dissociation of the temperature-sense itself was not observed.

Trophic changes are not pronounced apart from the muscular atrophy. A few insignificant scars indicate the sites of former injuries. The nails are not abnormal.

Nor are the vasomotor disturbances marked. On the chest and back the vasomotor irritability seems to be increased; this is especially noticeable when the finger is passed along the row of spinous processes. The hands are, as a rule, subjectively and objectively quite cold.

The iris-reflex is normal in either eye. The left conjunctival reflex is absent; the right one is present. The pharyngeal reflex is preserved. A brisk jaw-jerk can be obtained. The triceps-tendon reaction can be elicited in either arm. On percussion the supinator longus on each side contracts actively. No periosteal or tendon-reflexes exist at the wrists. The epigastric reflexes are absent. The knee-jerks are both much exaggerated, and are equal on the two sides. The tendo Achillis reflexes are quite active. The front-tap contraction is obtainable on either leg. Ankle-clonus was elicited on the left side at

one examination, but has not been produced since. The plantar reflexes are absent.

Hearing, taste, and smell are normal. The eyes were kindly examined for me by Dr. Pischl. V. with + 1.5 = 6/VI in both eyes. The field of vision determined for white and colors is normal. The ophthalmoscope reveals in the right eye a band of opaque nerve-fibers encircling the inner half of the papilla and equal in width to three-fourths the diameter of the disc. In the left eye a small patch of such fibers is seen at the upper, and another at the outer, edge of the disc. The papilla appears a little redder than is normal, which is probably due to the contrast with its white environment. There is a slight narrowing of the left palpebral fissure, its width being 8.5 mm., while that of the right is 9.0 mm.

The secretion of tears is more abundant in the left eye than in the right. As has already been mentioned, the left conjunctival reflex is abolished. The pupils react to light and in accommodation, and are equal. There is no nystagmus.

The spinal column is not tender to pressure. There is no scoliosis. On passing the finger down the row of spinous processes a peculiarity is felt in the shape of some of them in the lower dorsal and upper lumbar regions. The ninth dorsal spinous process is normal; the tenth is clubbed; the eleventh and twelfth dorsal and the first lumbar are clubbed and bifid; the second lumbar is like the tenth dorsal and the rest are normal.

The treatment since the patient has been under my care has consisted chiefly in the exhibition of iron. Her general health has improved, and she is now free from the pain in the back of the neck, but still complains occasionally that the hands ache.

The combination of symptoms such as have been described in the foregoing notes, consisting in progressive muscular atrophy of the Duchenne-Aran type and dissociation of sensory impressions, stamps this as a classical case of syringomyelia. If it be at all necessary to differentiate this malady from Mor van's disease, the absence of painless whitlows will be conclusive of the diagnosis.

How close the clinical resemblance between syringomyelia and anesthetic leprosy may be, despite the difference in pathology, is evident from the descriptions and illustrations furnished by Marestang. Dissociation of sensation has been observed by this author in leprosy; but only in one case among over one hundred was there retention of tactile sense with analgesia and thermoanesthesia, while in two cases there was retention of pain and of the thermic sense with tactile anesthesia. On the other hand, in syringomyelia loss of sense of contact has not infrequently been met with (which is not surprising, in view of its pathology). Such dissociations, however, are exceptional in leprosy, and the preservation of tactile sensation in syringomyelia is the rule. The muscular wasting in the extremities is similar in the two diseases, and even the atrophy of facial muscles, often seen in leprosy, has been observed in four cases of syringomyelia. Nevertheless a proper appreciation of what is frequent and what is rare in each, or the recognition of some characteristic of leprosy, such as anomalies of pigmentation, loss of hair, nodular thickening of nerves, the bacillus, etc., will generally lead to a diagnosis. But that errors may occur has been recently shown by Pitres[1] in his report of the case of a man who, presenting trophic disturbances and the sensory dissociation of syringomyelia, was for a long time considered to be suffering from that disease until the detection of Hansen's bacillus in a cutaneous nerve proved him to be affected with leprosy. This man had lived for three years in Martinique, and it is in countries which are in frequent communication with endemic foci that special caution is required. The Pacific coast is exposed to the occasional intrusion of lepers from Hawaii or China, and in the public eleemosynary institutions of San Francisco there are now thirteen lepers. But in the present instance, besides the absence of anything in the patient's antecedents likely to excite a suspicion of leprosy, and the lack of any symptom characteristic of that disease, the insensitiveness of the nerves to pressure, the fact that the disturbance of sensation is less profound at the peripheral parts of the upper extremities than in certain other regions, the fibrillary twitching, the augmented knee-jerks and the narrowing of the left palpebral fissure, decide in favor of syringomyelia.

Hysteria, that arch-mimic of organic nervous disorders, has also been known to simulate syringomyelia. Cases of this kind have been reported by Charcot[2] and by Rossolimo.[3] The latter tells of a girl, aged twenty, with interosseal paresis, analgesia, and thermoanesthesia, but only slight diminution of tactile sensation, in her hands. This combination of symptoms had recurred six times, in the course of a year and a half, at regular intervals, and disappeared promptly after an hypnotic séance. To discuss the possibility of the hysterical nature of the case now under consideration would appear like raising objections to a diagnosis simply for the pleasure of refuting them. Nor does it seem necessary to enumerate the features distinguishing cervical hypertrophic pachymeningitis from syringomyelia, the anesthesia in the district of cranial nerves alone sufficing to exclude the former.

The possibility of diagnosticating syringomyelia during life is not yet universally conceded. In the discussion of a case presented before the Neurological Society of New York, in 1890, the president, Dr.

[1] Gaz. des Hôpitaux, 1892, No. 137; abstract in Neurolog. Centralblatt, 1893, p. 102. See also Kalindero: Wiener med. Presse, 1892, No. 39.

[2] Leçons du Mardi, 1888–1889, p. 518.

[3] Neurolog. Centralblatt, 1892, p. 493.

L. C. Gray, said: "The only way to make a diagnosis of syringomyelia was to make an autopsy."[1] And the same view is expressed in his recent *Treatise on Nervous and Mental Diseases*,[2] although he acknowledges "that we are on the right track and that we shall be able to make a diagnosis in the early future." The fact is, however, that the diagnosis has been repeatedly made *intra vitam* and verified *post mortem*. Charcot[3] stated in 1889 that Schultze had twice and Kahler once found the diagnosis justified at the autopsy. Moreover, Déjerine,[4] in 1890, and again in 1891,[5] and with Sottas,[6] in 1892, reported cases in which the diagnosis of syringomyelia, which, during life, had been based on the muscular atrophy and the sensory dissociation, was corroborated after death. Verified diagnoses have also been recorded by Gyurman,[7] Critzmann,[8] and Bernstein.[9] In a report of a case of syringomyelia by Hughlings Jackson and Galloway[10] mention is made of an instance in which a diagnosis of Ferrier's was proved to be right at the necropsy. In Hoffmann's[11] Cases IX and XIV the disease had been recognized during the lifetime of the patients. Finally, the reviewer of Dr. Gray's book in the *American Journal of the Medical Sciences* for March, 1893, states that two cases of syringomyelia have been diagnosticated *intra vitam* in Philadelphia, and that the autopsy confirmed the diagnosis; the cases had, however, not yet been published. One of them is, perhaps, identical with that very recently recorded by J. H. Lloyd.[12]

This list makes no pretensions to being exhaustive, but it will suffice to show that the diagnosis may be ventured with some degree of certainty. Not all of the cases conformed to the most frequent type, but the pathognostic value of progressive amyotrophy with impairment, and generally dissociation of sensation, was sufficient to guide the observers to the recognition of the disease. The assumption of syringomyelia explains the course and the symptoms of the case with which we are dealing. The process of gliosis, taking its origin in the gray substance behind the central canal in the lower cervical region and extending into the posterior cornua, produced the subjective and objective disturbances of sensation in the upper extremities; ascending in the left posterior horn into the central regions of the occipital nerve and of the sensory part of the trigeminus, it impaired sensation in the left side of the head and face, and, descending into the dorsal part of the cord, rendered sensation on the trunk abnormal; the invasion of the right and left anterior cornua, successively, in the lowest cervical and first dorsal segments, gave rise to atrophy of the small hand-muscles in the same order, and, from the wasting of the muscles of the left fore-arm, it is evident that the destructive process is extending into the anterior horn higher up. The distressing jerking in the left lower limb may possibly be due to irritation of the lateral pyramidal tract on the same side. It may be mentioned that a similar symptom was noted in one of Schultze's[1] cases.

The loss of the left conjunctival reflex is due to the sensory disturbance in the distribution of the fifth nerve, and the slight narrowing of the left palpebral fissure is ascribable to the implication of sympathetic fibers in the lesion at the lowest cervical and uppermost dorsal segments. There is no concentric limitation of the field of vision. According to Hoffmann,[2] limitation of the visual field has been observed by Déjerine and Tuilant in seven, and by Morvan in five cases of syringomyelia, without hysteria; by other authors it has been found in five patients with syringomyelia in whom hysteria was either certain or at least probable; and it was absent in 26 cases. Including the present instance, therefore, its absence has been noted in 27 out of 44 cases of syringomyelia. Its comparative frequency in the French cases is conspicuous.

The opaque nerve-fibers in the retina merit some attention. This anomaly is rare. Manz,[3] of Freiburg, states that he found this opacity mentioned only 154 times in the records of half-a-million patients with ocular diseases. But among 113 psychopathic male inmates of a Freiburg institution opaque nerve-fibers were observed in the eyes of four. Manz had already previously[4] called attention to the possible value of this, as well as other congenital anomalies of the eye, as indicating a neuropathic predisposition, although they are not necessarily pathologic; and he suggested that they were likely to be found associated with certain diseases dependent on congenital abnormalities of the central nervous organs. Now, according to the prevailing theory, the origin of syringomyelia is to be sought in a defect in the developmental tendency of the spinal cord, or, as Hoffmann more definitely expresses it, in a defective closure of the embryonic canal, whereby germinal cells are retained in the line of closure which

[1] Boston Med. and Surg. Journal, 1890, vol. cxxiii, p. 570.
[2] Pp. 267 and 268.
[3] Leçons du Mardi, 1888–1889, p. 488.
[4] Société de Biologie, February 8, 1890.
[5] La Semaine Médicale, 1891, No. 6.
[6] See Neurolog. Centralblatt, 1892, p. 710.
[7] Abstract in Neurolog. Centralbl., 1891, p. 504.
[8] Essai sur la Syringomyélie, 1892; Neurolog. Centralbl., 1892, p. 708.
[9] Neurolog. Centralbl., 1893, No. 3, abstract.
[10] Lancet, Feb. 20, 1892.
[11] Deutsche Zeitschrift für Nervenheilkunde, Bd. iii.
[12] University Medical Magazine, March, 1893.

[1] Virchow's Archiv, Bd. 102.
[2] Deutsche Zeitschrift für Nervenheilkunde, iii, p. 16.
[3] Berliner klinische Wochenschrift, 1890, p. 955.
[4] Arch. f. Psychiatrie, 1884, xv, p. 837.

subsequently proliferate and lead to primary gliosis. In support of the view that a defect in the original constitution of the central nervous system is responsible for the development of syringomyelia Hoffmann adduces some cases in which that disease was combined with other nervous diseases generally considered as arising from a congenital predisposition, and in others in which at the autopsy abnormal anatomic features were found that must be regarded as developmental errors. Among the latter are mentioned an abnormal strand of white fibers in front of the anterior commissure, heterotopia of gelatinous substance in a posterior column, heterotopia of gray matter, etc. The presence of medullated (opaque) nerve-fibers in the retina is submitted as an addition to this list.

In conclusion, the peculiar form noted in some of the spinous processes may be alluded to as perhaps indicating some developmental irregularity.

ORIGINAL LECTURES.

THE VALUE OF STRYCHNINE IN THE TREATMENT OF DISEASES OF THE LUNGS.[1]

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ABOUT five years ago I began the use of strychnine in the treatment of asthma, with good effects, and believing, as I did then and as I still do, that probably most pulmonary diseases have a pathologic basis similar to that of asthma, or in other words that they are intimately related to the nervous system, I have since been induced to test the efficacy of this drug in the treatment of the various inflammatory affections of the respiratory organs; and my purpose this evening is to give an account of the results of its administration, and also to present my views as to its therapeutic action in these diseases.

It is well known that no drug in the materia medica affects the nervous system more profoundly than strychnine. Its action is principally confined to the medulla oblongata, the spinal cord, and the peripheral motor nerves. Consciousness and the higher nerve-centers seem to be wholly unaffected by it. It is a most powerful stimulant in small doses; a convulsant in medium doses; and a narcotic or paralyzant in large doses. The narcotic or paralyzant action of strychnine is generally overlooked in the discussion of its physiologic properties; but it has been very well demonstrated, especially by Reichert, that, if large doses are injected, no convulsions occur, the animal becoming as limp as if it had been paralyzed by a large dose of morphine or of curare.

Strychnine also differs greatly in action from other stimulants, inasmuch as its stimulating stage occurs markedly and pronouncedly before its convulsant or paralyzing phases. Besides its general action on the medulla oblongata, spinal cord, and peripheral nervous system, strychnine possesses a special influence on the respiratory centers and pneumogastric nerves. In man and in animals it accelerates the breathing movements and provokes deeper and fuller inspirations. Indeed, when excessive doses are given, so that convulsions are excited, this influence is so great that the thoracic movements are arrested at the period of maximum inspiration. While this is true of the action of large doses of strychnine on normal respiration, the drug has an opposite effect if given in smaller or stimulant doses when the breathing is hurried from disease. This I have confirmed by clinical observation in cases in which the abnormally high respiration-rate was incidental to nervous exhaustion accompanied by subnormal temperature. The same is true of its action on the heart. In large doses it accelerates the movements of this organ, but in smaller doses, given hypodermatically, say from $\frac{1}{30}$ to $\frac{1}{20}$ of a grain, I have seen it reduce the cardiac pulsations from 100 to 84 in the course of a few minutes.

Over and above its stimulating action on the nervous system, or perhaps indirectly through the sympathetic and pneumogastric nerves, strychnine possesses the power of increasing the absorption of the products of digestion in the alimentary canal and of enhancing the blood-building process. This observation we owe to the brilliant researches recently made by Professor Hofmeister and his pupil Dr. Pohl.[1] Before these experiments were made we knew little or nothing concerning the function of alimentary absorption, except that the food-products were taken up in some fashion by the bloodvessels and by the lacteals of the stomach and of the intestines. That the albuminous food is changed into peptone had been demonstrated clearly enough; that peptone does not enter the blood in a free state was also plainly evident from the fact that it is not found as such in the blood, and that when injected into the blood it acts as an active irritant and poison, and is rapidly eliminated by the kidneys.

Now, Professor Hofmeister has demonstrated in these experiments that during digestion there is a very decided augmentation in the number of white blood-corpuscles formed and developed in the adenoid tissue or lymphatic glands of the alimentary mucous membrane; that these corpuscles imbibe and incorporate the peptone formed by the digestive process; and that the peptone loses its identity in and is distributed by them to the tissues of the body by way of the circulation. It does not concern us here to know whether the tissues of the body take up the nutritive material from the white blood-corpuscles or peptone, or whether peptone is changed into some other form of albumin before it reaches its destination.

That which is of the greatest interest here, however, is the investigation of Dr. Pohl, who studied the physiologic influence of different kinds of food and drugs on the white blood-corpuscle formation in the lympathic tissue of the alimentary canal. He counted the number of white blood-cells in the blood of dogs before and after these foods and drugs were administered by the mouth, and found an average increase in these cells of more than 100 per cent. after the ingestion of albuminous foods, but no increase in their number when carbohydrates, fats, alcohol, salts, water, and foods of a non-

[1] Delivered to the Polyclinic Class, February 6, 1893.

[1] Archiv für experimentelle Pathologie u. Pharmakologie, vol. xix, p. 1, and vol. xxv, p. 31.

albuminous nature were given. On the other hand, he tested the action of strychnine and of other medicinal agents in the same manner, and discovered that some were inert, while others had a most remarkable influence in this respect. For example, he found that strychnine, which was one of the best agents, nearly equalled beef in its power of augmenting the number of colorless blood-cells.

In estimating the therapeutic value of strychnine we must, therefore, not overlook the property which it possesses of enhancing the process of white blood-cell formation. This means a great deal. It means that, in addition to its other functions, it is a genuine blood-builder. It means that it greatly aids the lymph-glands of Peyer, with which the intestinal walls are studded, in common with the spleen and the other lympathic glands throughout the body, in transforming and organizing reserve nutritive material into white blood-cells. The importance of this influence will be fully realized when we consider that recent advances in physiology make it exceedingly probable that a large number of red blood-corpuscles are nothing but transmuted white blood-cells—the change consisting chiefly in a transformation of the protoplasm of the latter into hemoglobin and stroma. Unlike food, strychnine does not supply the material from which these cells are formed, but it furnishes the force which stimulates to increased activity the organs whose function it is to generate them. To sum up, then, the action of strychnine, it can be said that over and above its influence on the general spinal nervous system, it acts specifically on the medulla oblongata, on the respiratory centers, and on the pneumograstric nerves, and additionally possesses the power of invigorating the blood-making process.

In the present state of therapeutics it goes without saying that if there is not, there should be some rational indication in any given disease for the remedial agent that is employed. What then, viewed from this standpoint, is the indication for the administration of strychnine in the various forms of pulmonary disease? I have already intimated my belief that diseases of the lungs are closely associated with disease of the nervous system, and I will go further and say that this relationship is one of cause and effect—that the diseases of the lungs exist in virtue of disease of the pneumogastric nerves and other parts of the nervous system.

It is exceedingly strange that, in spite of the great advance recently made in the study of diseases of the nervous system, the physiologic and pathologic connection between the lungs and their nerve-supply has been practically ignored. The lungs are innervated by the largest and most important nerves in the body, yet nearly all the diseases that affect these organs are at the present day attributed to the influence of irritants introduced from without, and the possibility that the fault may reside in the nerve-supply does not even receive serious consideration. This is indeed exceptional, for it is not in the least true in disease of other organs. When, for example, an arm, or a leg, or an eye becomes subject to certain forms of disease, immediate inquiry is made into the state of their nerve-supply, which is often found to be wholly responsible for the disordered manifestation. Paralytic ophthalmia, which has been described by Serres, Herbert, Mayo, Abercrombie, Stanley, and others, is, owing to the experiments of Magendie, known to depend on disease of the trigeminal nerve. Ulceration of the skin and subjacent tissues follows injury to the spine. Cutaneous inflammations, like zoster, eczema, acne, pemphigus, erythema, excoriations, elephantiasis, etc., are often sequential to diseases of the nerves that supply the affected parts. Intermittent ophthalmia, intermittent otitis, intermittent arthritis exist in virtue of intermtttent neuralgia of the supplying nerves. Peripheral neuritis gives rise to herpes intercostalis, frontalis, preputialis, etc., and it is also demonstrated that leprosy, scleroderma, and the disease first described by Paget, under the name of *glossy skin and fingers*, are intimately associated with the underlying nerves.

Now when all these general facts are connected with the special one that experiments almost without number have been made on animals, which, with hardly an exception, show that many of the catarrhal and inflammatory affections of the lungs follow division of or injury to the pneumogastric nerves, there is cause for still greater surprise at the persistence with which this frequent source of lung-disease has been disregarded. I am well aware that this pulmonary degeneration is known by the name of "Schluck" or deglutition pneumonia, which implies that it is not primarily due to vagus-injury, but to the entrance of mucus, saliva, particles of food, etc., into the lungs, owing to the insensibility of the larynx and paralysis of the esophagus, sequential to operation. Aside from the fact that this is a weak and irrelevant argument, in so far as the final cause of this phenomenon is concerned, Arnsperger[1] and others have shown that if, after section of the nerves in question, a tube is inserted in the trachea, and the admission of foreign bodies into the lungs is prevented, the same pulmonary changes occur. But even if it were clearly demonstrated that, owing to a defect of nerve-influence in the larynx and pharynx, particles of food, mucus, saliva, and other secretions of the mouth and pharynx penetrate the lungs, and have the power of setting up pneumonia in animals, which no one has yet shown, we would, after all, have to inquire whether or not the same conditions and the same train of phenomena may develop in man as a sequel to disease of the vagus and its branches.

It is not necessary, however, to look to experiments on animals alone for proof that lesions of the pneumogastric nerves are capable of producing various pulmonary diseases, for there are many instances on record in which pulmonary consumption, pneumonia, bronchitis, etc., have occurred as a result of disease of these nerves, as will be seen from the tabular report[2] of about one hundred and fifty cases which I gathered from the literature on this subject, and which show the intimate dependence of the one on the other. Aside from this evidence I shall take the liberty of quoting the opinions of medical men whose attention had been especially directed to this subject, and who are abundantly capable of passing intelligent judgment on it.

As early as 1850 Dr. J. C. Holland regarded pulmonary consumption as "a disordered condition of the nervous system." In 1871 Dr. Clifford Allbutt[3] describes a

[1] Virchow's Archiv, vol. ix, pp. 197 and 437.

[2] Pulmonary Consumption a Nervous Disease. 1891. George S. Davis, publisher, Detroit, Mich.

[3] Medical Times and Gazette, 1871, vol. ii, p. 613.

variety of phthisis which he calls the neurotic type, and he says of it: "The more I study the relations of the disease the more satisfied I am that the lung-mischief is also a neurosis—by which I mean that the lesion is one not originating in the local tissues, but in the nervous system." Laycock[1] says that "Defective pneumogastric innervation upon a loss of cerebro-spinal power is a very common predisposing and exciting cause of phthisis." In discussing a paper on "Pneumo-paresis," read by Dr. W. B. Richardson before the London Medical Society, Dr. J. Hughlings Jackson remarked that he regarded acute pneumonia as a form of herpes zoster of the pneumogastric nerves.[2] Dr. Peter[3] states that neuralgia of the pneumogastric nerve is very common in pulmonary phthisis, as may be shown by making pressure over the nerve in front of the scaleni. Dr. Fernet[4] holds that so-called fibrinous pneumonia is a herpes of the lungs, brought about through neuritis of the pneumogastric nerves. Drs. Bianchi and Armandi[5] report that in eleven cases of terminal pneumonia in paralytics they found neuritis of the vagi in every instance.

Dr. Bianchi[6] discusses a form of pneumonia that frequently occurs in paralytics, but which differs clinically and anatomically from croupous pneumonia. The temperature is usually below 39°, while the pulse varies from 50 to 140 beats; cough and expectoration are absent sometimes, and the respiratory movements are feeble, slow, and superficial. Percussion and auscultation do not always give positive results. Fibrinous exudation is seldom present, and the affected lung usually remains in a hepatized condition. Frequently there exist larger or smaller gangrenous foci, and nearly always, if the case is of long standing, a puriform infiltration of the bronchi and alveoli. All of these manifestations simulate those of pneumonia following section or compression of the vagi, and which the author generated in rabbits and dogs. In a number of paralytics who died of pneumonia he was able to trace a primary degenerative atrophy of the vagi, and hence he believes that these pneumonias are dependent on vagus-degeneration. He does not accept the doctrine of Traube and Frey that this disease is engendered by the swallowing of food, etc. (*Schluck-pneumonie*).

Prof. Baelz[7] states that in the Japanese University he teaches that pneumonia is a reflex vasomotor exudative neurosis. Goodhart[8] says: "I really believe that injuries to the head are quite capable, by interfering with the control-power of the nervous centers, of leading to disordered function in the first instance, and in the second to such pronounced organic departures even as an acute pneumonia." Dr. Jappa,[9] who examined the peripheral nerves in the bodies of fifteen persons dead of pulmonary phthisis, found marked degeneration in every case. He states that in these patients there were no nervous symptoms during life other than those found in almost all cases of the kind, such as undefined muscle-pains, neuralgia, hyperesthesia, etc. Dr. Lewin,[1] in a minute study of the ganglion of the trunk of the vagus in twenty cases of pulmonary phthisis, found it degenerated in every instance. Busi[2] states that in many cases we must regard tuberculosis and insanity as an expression of the same constitutional weakness. In 50 per cent. of the cases of insanity which he collected in the Asylum for the Insane at Basle there was tuberculous heredity; in 47.2 per cent. there was neuropathic heredity; and in 20 per cent. there was a mixture of neuropathic and tuberculous heredity. Dr. O. Vierordt[3] states that on the whole no decided opinion can yet be given on the subject of the relationship between pulmonary phthisis and peripheral nerve-degeneration, but the indications of such a possibility are so apparent that a further investigation is demanded. Clouston[4] states that "The evidence seems to show that if tuberculosis cannot itself be called a neurosis, it is in most cases dependent for its existence on a trophic neurosis, or has the closest affinity to it."

Dr. Samuel Wilks, in commenting on a case of neuroma, says:[5] "It has been said that the patient died of phthisis, and these tumors were found accidentally; but in all probability the affection of the nerves, that is, of the pneumogastrics, was the cause of the pulmonary disease, and, therefore, so far from neuroma being a harmless affection, it was the cause of the girl's death. This idea is suggested by the observation of several cases of pneumonia occurring in connection with disease of these nerves—particularly as witnessed in aneurism of the aorta and cancer of the esophagus. In these diseases death is often brought about by the pulmonary complication, and the pneumogastric nerves are found implicated in the disease or pressed on by the tumor."

On a case of fibroma in the posterior mediastinum, the eminent Sir Wm. Gull[6] made the following remarks forty years ago: "This case affords an excellent illustration of the effects which are referable to paralysis of the pulmonary plexus on one side—accumulation of muco-purulent secretion in the paralyzed bronchi, subsequent dilatation of the tubes at their peripheral distribution, concomitant exudation into the air-cells, hepatization, and, at length, disintegration of tissue. . . . . It is one of the evils of a too exclusively humoral pathology [bacillary pathology, we might substitute at the present day—Mays] that it leads us to overlook the minute anatomical relations of disease, which are in themselves often a key to the sequence of morbid changes. These cases illustrate this proposition, for the possible local effects on the lung of injury to the pneumogastric and pulmonary plexus being recognized, whenever cause for that injury exists we may anticipate its results, and are not wholly dependent on physical examination, as we are if we limit our pathological view to the mere changes in the lung, without considering how they are produced."

[1] Medical Times and Gazette, 1862, p. 205.
[2] See London Medical Society's Proceedings, vol. xi, p. 95.
[3] Gaz. des Hôpitaux, 1876, No. 88; New York Med. Journ., vol. xxv, p. 212.
[4] Praktische Heilkunde, 1879, i. p. 18.
[5] Neurologisches Centralblatt, 1888, vol. vii, p. 452.
[6] Ibid., 1890, p. 249.
[7] Centralbl. f. klin. Med., 1888, p. 883.
[8] Common Neuroses, p. 41.
[9] Neurologisches Centralblatt, 1888, Bd. vii, p. 425.

[1] Beiträge zur Pathologie der N. Vagus. 1888.
[2] Neurologisches Centralblatt, 1887, p. 282.
[3] "A Contribution to the Study of Multiple Degenerative Neuritis," Archiv f. Psychiatrie u. Nervenkrankheiten, 1883, p. 678.
[4] The Neuroses of Development, p. 92.
[5] Trans. London Path. Society, vol. x, p. 1.
[6] Guy's Hospital Reports, 3d series, vol. v, p. 307.

From what has so far been said it is obvious that we possess both experimental and clinical evidence, of the most incontrovertible character, that many forms of pulmonary disease may and do originate through the intervention of disease of the pneumogastric nerves. By this it is, of course, not implied that one must look for a compression of these nerves by aneurisms, tumors, or enlarged glands in all cases, but that we must recognize the fact that any depression or poisoning of the nervous system, whether this is produced by peripheral neuritis, by disease of or injury to the spinal cord or the brain, by cerebro-spinal meningitis, influenza, diphtheria, beri-beri, leprosy, whooping-cough, alcohol, syphilis, diabetes, mercury, lead, brass, etc., is always capable of producing pulmonary degeneration. It is just as reasonable to believe that many pulmonary affections are developed through pneumogastric disease as it is to believe that asthma, which is universally regarded as a neurosis, and which leads to bronchitis, pneumonia, and phthisis, is developed through the same channel. I have on a number of occasions shown the great utility of strychnine in the treatment of asthma before this class, and if clinical experience is able to demonstrate, as I feel confident it will be, that the power of strychnine to alleviate bronchitis, pneumonia, phthisis, etc., is of no less importance than it is in asthma, it is another strong link in the chain which supports the theory that most pulmonary disorders are primarily and throughout largely nervous in nature. Indeed, if strychnine has any value whatever in these diseases, no other possible conception of its action can be formed than that which it possesses through its influence on the nervous system.

The General Therapeutic Action of Strychnine in Diseases of the Respiratory Organs.

There are very few drugs in the materia medica the beneficial effects of which manifest themselves more quickly and more promptly in pulmonary diseases than those of strychnine. One of its earliest ameliorating influences is seen in the lessened amount of cough and expectoration. Another is the relief which it affords to difficult breathing and in quieting the nervous restlessness. There is also a reduction in the accelerated pulse-rate. The alleviation of these symptoms is especially pronounced in those who suffer from chronic bronchitis or asthma. At the same time the patient has a desire for more food, and begins to increase in weight and gain in strength. This tendency to put on flesh seems to be one of the peculiar attributes of strychnine. Thus, I have observed that the hypodermatic administration of this drug daily, in doses of $\frac{1}{24}$ of a grain, other conditions remaining the same, added five pounds in the course of eight days to the weight of a patient suffering from angina pectoris. I have seen the same improvement in other diseases in which this agent was given by the mouth. This power on the part of strychnine to augment bodily weight is really a very important one, inasmuch as it demonstrates that drugs which are exclusively stimulant in their action are also constructive agents in an indirect sense, although, unlike food, they contribute no material whereby the bodily tissues are built up. They act very much like the spur or the whip does on a lazy horse. They enhance molecular or vital activity, and in doing this they cause the tissue-cells to assimilate and to appropriate an increased amount of reserve nutritive material.

Dose of Strychnine.

The amount of strychnine which is given is of more importance than the mere giving of the drug itself. I have long been convinced that in the great majority of diseases strychnine is inert on account of the diminutiveness of the dose in which it is commonly administered, and that to secure the greatest and best possible advantage, it is necessary to push it to the point of therapeutic tolerance. From this it is not to be inferred that the patient should be exposed to the risk of strychnine-poisoning, but that the constitution should be slowly impressed with the influence of the drug until there is developed a heightened reflex irritability and general restlessness, or until brilliant light or loud sounds produce a painful sensation in the eyes and ears, or until diarrhea occurs. When these symptoms begin to show themselves the quantity of the drug must be reduced, either by diminishing the dose or by giving the dose which was previously given at longer intervals. The same dose which develops toxic symptoms at one time may, however, subsequently be given with perfect impunity—showing that instead of being cumulative, as it is generally supposed to be, it establishes a tolerance for itself.

So far as my experience goes, the best results are obtained from strychnine by beginning with doses of $\frac{1}{32}$ of a grain four times a day, and although this may seem to be a large amount to start with, practically it is well borne in most cases. Indeed, it seems as if most of those who are suffering from asthma, bronchitis, and kindred diseases, bear larger doses of this drug than those who suffer from other general affections. After finding that this dose agrees, I give it for two weeks, and then begin to increase it $\frac{1}{8}$ of a grain each week, until the patient begins to manifest some physiologic disturbance due to its action. In some cases this does not occur until $\frac{1}{7}$ or $\frac{1}{6}$ of a grain, or even a larger dose is given, four times a day. My usual way of administering strychnine in pulmonary diseases is to combine it with the following drugs, which I believe have the power of enhancing its action and of meeting some collateral indications in these cases.

℞.—Phenacetini, Acetanilidi, Quininæ sulph. . . āā gr. xxxij.
Pulv. capsici . . . . gr. v.
Ammon. chlorid. . . . ʒj.
Strychninæ sulph. . . . gr. j.
Atropinæ sulph. . . . gr. $\frac{1}{25}$.—M.
Ft. capsulas no. xxxij.
Sig.—One capsule four times a day.

This combination may be modified. If there is much fever the doses of phenacetin and acetanilid may be doubled or trebled, and in case of marked sweating the atropine may also be increased. In pulmonary diseases brought on by the abuse of alcohol the dose of capsicum may be largely augmented with benefit.

The Special Application of Strychnine.

The special application of strychnine to individual pulmonary diseases will now be considered in the fol-

lowing order: (1) asthma; (2) bronchitis; (3) emphysema; (4) croupous pneumonia; and (5) pulmonary consumption.

ASTHMA.—In the treatment of asthma it is advisable to begin with $\frac{1}{30}$ of a grain hypodermatically, and on account of the nocturnal nature of the disease, if possible, give the injection in the evening, so that its influence may fully extend to the time of the attack. In addition to this, give from $\frac{1}{32}$ to $\frac{1}{30}$ of a grain of the same drug four times a day in connection with the phenacetin, etc., in the aforementioned capsules, or the same dose may be administered with half a dram each of syrup of hydriodic acid and syrup of the hypophosphites, four times a day. Increase the dose of strychnine gradually, both in the hypodermatic injections and in its administration by the mouth. As much as $\frac{1}{20}$ of a grain is easily borne by most asthmatics, and the injections should be repeated every, or every other, evening until the attacks disappear. If the attack is very stubborn, and the patient has lost a great deal of rest, add $\frac{1}{20}$ of a grain of morphine to the first few evening injections. Due attention, must of course, be given to food, diathesis, state of the excretions, rest, well-regulated exercise, etc., in all cases of this kind.

CHRONIC BRONCHITIS.—In this disease strychnine is strongly indicated and always used with advantage. This holds as well in that form which is idiopathic or primary as it does in that which is secondary to some cardiac disorder. As a rule, there is less urgency for relief in this disease than there is in asthma, and hence the hypodermatic administration of strychnine is less imperative. In the primary form in adults, commence the treatment by giving $\frac{1}{32}$ of a grain four times a day with syrup of the hypophosphites and syrup of hydriodic acid, and slowly increase to $\frac{1}{20}$ or $\frac{1}{16}$ of a grain. In cardiac or secondary bronchitis five drops of the tincture of digitalis may be added to each dose of strychnine. This is not essential, however, for cardiac bronchitis, especially when associated with irregularity of the heart's action, will do remarkably well under the strychnine and syrups alone. Of course it is always of the greatest importance to unload the portal circulation by free catharsis with calomel at the very outset. When the expectoration is profuse, combine the strychnine with phenacetin, quinine, atropine, capsicum, and ammonium chlorid. In the chronic bronchitis of children more than eight years old, begin with $\frac{1}{40}$ of a grain of strychnine with the syrups, three times a day, and gradually increase to $\frac{1}{32}$ of a grain at the same intervals. In children it is especially advisable to apply a weak liniment composed of croton oil and sweet oil, one part of the former to five parts of the latter, well rubbed in the chest, morning and evening, until a crop of fine pustules is produced.

EMPHYSEMA.—This disease is usually secondary to asthma, chronic bronchitis, pneumonia, or phthisis, and consists of a more or less permanent dilatation of the pulmonary air-cells on account of a loss of contractility or elasticity of the walls of these structures. Although we know nothing of the distribution of nerve-fibers to the vesicular parts of the lungs, or whether strychnine has the power of contracting or of giving tone to the distended vesicles, it is quite certain that this agent has a wonderful ameliorating influence on this morbid condition—perhaps more by relieving the concomitant bronchitis, by fortifying the parts less seriously implicated and by increasing the constitutional vigor, than by any direct action. In the beginning of the treatment $\frac{1}{32}$ of a grain should be given to adults four times a day, and this should be progressively increased until a decided impression is made on the patient. If the dyspnea is very pronounced, this dose may be reinforced by an injection of $\frac{1}{30}$ of a grain of the same drug daily or every other day.

CROUPOUS PNEUMONIA.—The employment of strychnine in large doses in the treatment of croupous pneumonia is, so far as I know, chiefly owing to the clinical researches of Dr. Brunton, which, if I remember rightly, were published in the *British Medical Journal* about eighteen months ago. At any rate, his experience led me to test it, and I can fully confirm his favorable opinion of its action. My method of administering this drug in croupous pneumonia is as follows: Immediately after seeing an adult case, I give $\frac{1}{30}$ of a grain hypodermatically, and $\frac{1}{30}$ of a grain by the mouth, alternately every three hours. The hypodermatic injections, together with the internal administration, are continued until decided restlessness begins to be shown by the patient, which usually occurs on the fourth or fifth day of the treatment. In some cases this appears earlier. Old alcoholics who suffer from this disease bear even larger doses with great benefit. It is worthy of remark, too, that strychnine has a sedative influence on the restlessness, delirium, picking at the bed-clothing, etc., which are caused by the disease. Care must, therefore, be exercised so that these symptoms are not mistaken for the toxic action of the drug. Strychnine, in connection with the external application of ice in rubber bags, and nutritious food, has given me most unexceptionable results in the treatment of croupous pneumonia, for a record of which I beg to refer to my two communications on this subject, which were published in THE MEDICAL NEWS for September 24, 1892, and January 21, 1893. Since that time I have adopted the method in other cases, and have collected quite a number of cases from other practitioners who have been kind enough to test it, all of which I shall prepare for publication at an early day. Strychnine is also very serviceable during convalescence from pneumonia, in combination with the syrup of hypophosphites and syrup of hydriodic acid, as follows:

℞.—Strychninæ sulph. . . . gr. 1 or 1⅛.
Syr. acidi hydriodici. } . āā f℥ij.—M.
Syr. hypophosphit. }

Sig.—One teaspoonful four times daily.

PULMONARY PHTHISIS.—Strychnine is no less valuable in phthisis than it is in any of the diseases in which its action has been discussed this evening, although its effects may be less apparent because it is given in a disease which is essentially chronic in its nature and is less impressible than are acute or functional diseases. Nevertheless I regard it as an indispensable agent in the treatment of this affection, and almost invariably administer $\frac{1}{32}$ of a grain at the outset, in combination with phenacetin, acetanilid, etc. (see composition of capsule, page 92), and, as has already been stated, after the first two weeks increase the dose gradually until the limit of its physiologic action is reached. The quantity of the other ingredients in the capsule remains about the same

except in the case of phenacetin and acetanilid, which are increased or diminished according to the degree of fever present. I may as well say that these two agents are not used here for the sole purpose of subduing the abnormal temperature, but I regard them as most useful supporting agents to the nervous system, and as being capable of enhancing the action of strychnine. I administer them, therefore, when fever is absent, although, as already intimated, in smaller doses than when fever is present. Hence, at the end of a course of three months' treatment of a case of phthisis, with fever of about 100° or 101° in the evening, the probable composition of the capsule will be the following:

℞.—Phenacetini } Acetanilidi }	. . .	āā ʒjss.
Quininæ sulphat.	. . .	gr. xxxij.
Pulv. capsici.	. . .	gr. v.
Ammon. chlorid.	. . .	ʒj.
Strychninæ sulphat.	. . .	gr. ijss.
Atropinæ sulphat.	. . .	gr. $\frac{1}{25}$.—M.

Ft. capsulas no. xxxij.

Sig.—One capsule four times daily.

If fever is practically absent at that period, then a grain each of phenacetin and acetanilid is given, but the quantity of strychnine, as indicated in the foregoing capsule, is maintained. Phenacetin and acetanilid are believed to be injurious when given continuously for a long time, but of this, so far as I am able to judge from gross appearances, I have seen no evidence, even after administering them in large doses to the same individual for a period extending over a year. The most marked influence which follows the administration of this combination in the way described is seen in the diminution of cough and expectoration, in the increase of appetite and strength. In cases of alcoholic phthisis it is necessary to give the strychnine in larger doses than in non-alcoholics, and also increase it progressively. These patients also tolerate inordinate doses of capsicum with great benefit.

In connection with this internal medication it is, of course, understood that in order to succeed it must go hand-in-hand with well-regulated rest, nutritious food, pneumatic and electric treatment, sun-baths, massage, etc. Pulmonary phthisis is a complex constitutional and local disease, the cure of which is not vested in the influence of a specific agent, but in the application of material and forces which tend to augment and enhance the vital resistance of the body to disease.

LOCALIZATION IN DISEASES OF THE SPINAL CORD.[1]

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THE clinical study of diseases of the spinal cord has been given new impulse and placed upon a reliable scientific basis by the establishment of the principles of localization. Lesions can now be definitely estimated, and their importance properly assigned. To work out fully their extent, whether in the center or periphery of the cord, or limited to its columns, requires thorough acquaintance with the anatomy and physiology of the cord. Localization is but the correct interpretation of symptoms—motor, sensory, reflex, vasomotor, and trophic—arising in any case of spinal disease. It is to be noted that most diseases of the spinal cord are limited in area, and may involve but one segment or spinal unit. In actual disease, however, even if incipient, more than one segment is usually affected.

The motor symptom most prominent in spinal disease is diminished function or paralysis, although we do have symptoms of increased function, as shown in spasms cramps, and rigidity.

Paralysis of spinal origin may be caused by two distinct lesions: first, when voluntary impulses from the brain to the spinal motor centers are cut off, as in compression; secondly, when the spinal motor centers are destroyed (Starr), as in acute anterior poliomyelitis. The first type is not followed by atrophy, and the electric reaction is normal, while in the second, the paralysis is followed by more or less degenerative atrophy, and the electric reaction of degeneration is marked. Starr emphasizes the importance of separating these two forms of paralysis, because the line of treatment is determined by the condition found. In the first type surgical treatment may remove the cause of paralysis, while in the second nothing can be done.

By the use of electricity we can estimate the degree and distribution of the paralysis, and in this way assist in localizing the lesion. The diagnostic uses of electricity are, therefore, important, and the general rule of Bramwell should be borne in mind, viz.: "When the nutritive condition of muscles and nerves is not profoundly altered—that is, when the trophic-nerve nuclei, the motor nerves, and motor-nerve endings are healthy—the electric alterations are merely quantitative; when, on the contrary, the trophic-nerve nuclei are destroyed, when the trophic-nerve influence is shut off from the muscles by severe lesions of the peripheral nerves, when, in short, the peripheral motor nerves and motor-nerve endings are degenerated, qualitative alterations in the electric reactions, to which the term *the reaction of degeneration* has been applied by Erb, appear."

During the past week I met a case in which the alterations of degeneration, while present, yet required considerable time to work out their extent, and to localize the lesion, thus emphasizing the fact that it is only by observing the muscles, or groups of muscles, thus affected that we can localize the lesion. We must also call to our assistance the very valuable table of Starr, which is to be found in all recent works on diseases of the nervous system.

The sensory symptoms are localized by a study of the distribution of the posterior nerve-fibers and the character of the alterations of sensibility, such as temperature-perception, pain, anesthesia, hyperesthesia, etc., by means calculated to show the impairment of functions in the sensitive areas to be investigated.

The ability to localize sensibility depends greatly on the thoroughness of the tests used. "The point of chief

[1] Read before the Tri-State Medical Society, Keokuk, Iowa, April 4, 1893.

importance in testing sensation is to find some part of the patient's body which is unaffected, and with this part as a standard, to compare affected parts" (Starr). The sensory functions of the individual segments of the cord have been pretty thoroughly determined, so that by defining the area of surface affected we can determine the localization of the lesion.

In the study of the localized functions of the cord the level of origin of the nerves, their point of exit in relation to the spinous processes, and their final distribution, are of paramount importance. The diagram of Gowers, to be found in all standard works, shows the relationship of the vertebral and spinal segments and spinal nerves. The spinal nerves have their exit lower through the spinous processes than they arise in the cord, and as we descend the cord these lengths of the nerves increase before passing out of the canal, so that when we reach the end of the cord we find quite a bunch of nerves forming the cauda equina. We must bear in mind, therefore, that the lumbar nerves are not opposite the lumbar vertebræ, nor, in fact, are any of the spinal nerves directly opposite the vertebræ of the same name. This fact is of great importance in surgical diagnosis. Spinal lesions are generally bilateral, and especially so in sensory disturbances, although in what is termed Brown-Séquard's paralysis we find "paralysis of motion and muscle-sense on the same side as the lesion, while sensibility is paralyzed on the opposite side, pain and temperature being especially affected." Hyperesthesia and increased reflex action are noted on the side of the lesion.

Other primary considerations in the localization-study of diseases of the spinal cord are the reflexes. They show the condition of portions of the segment through which the reflex passes. To insure reflex action requires that the sensory or efferent fibers be intact, the ganglion-cell perfect, and the afferent or motor fibers preserved; this combination constitutes the reflex arc, and any interference with one or more of these essential elements, affects reflex action. Disease may destroy the lateral columns and posterio-internal columns without affecting reflex action. The reflex system of the spinal cord is made up of a series of these arcs or loops, and disease may affect one or more of them, being manifested either in increased or diminished action. Disease may not be indicated by the absence of a reflex, for through an idiosyncrasy in the physiologic make-up of a person it may be absent; again, disease outside of the cord may affect reflex action. Disease affecting special portions of the cord, as in locomotor ataxia, will destroy reflex action.

Excessive or increased reflex action is caused by disease that increases the irritability, and, consequently, diminishes the specific resistance of the arc in any part of its course, as excitability of gray matter from adjacent inflammatory disturbances, and then diseases which arrest conduction, as in diseases of the lateral columns, where both superficial and deep reflexes are affected.

The localization of reflex disturbances enables us to confirm motor and sensory symptoms. The superficial reflexes are the plantar, gluteal, cremasteric, abdominal, epigastric, and interscapular, each having local significance and importance.

The interscapular reflex embraces the seventh and eighth cervical and the first and second dorsal segments; the epigastric, the fourth to the seventh dorsal, inclusive; the abdominal, the eighth to the twelfth dorsal, inclusive; the cremasteric, the first to the third lumbar; the gluteal, the fourth and fifth lumbar; and the plantar, the first to the third sacral. These reflexes are obtained by gently irritating the skin with the point of a sharp instrument or with the finger.

The important deep reflexes are the patellar tendon-reflex and the ankle-clonus. The patellar tendon-reflex is obtained by striking the ligamentum patellæ while the knee is semi-flexed, or, as Buzzard recommends, by having the patient, who is seated, plant his foot firmly down at such a distance that the leg forms a little more than a right angle with the thigh, whilst the observer rests the palm of his left hand upon the patient's thigh, and with the right strikes the ligamentum patellæ about one-eighth of an inch below the knee-cap. The quadriceps muscle can be felt, and can be seen to contract more or less vigorously in response. If the patient is in bed, the knee should be flexed and the heel held firmly down upon the bedding whilst the blow is struck. The quadriceps will be seen to contract. If the phenomenon be absent, we must then endeavor to locate the interruption in the arc and ascertain its cause. If the patient can walk freely, and can flex and extend the leg with vigor, we may exclude the motor side of the arc. The most conspicuous illustration of a flaw on the sensory side is furnished by tabes dorsalis.

Trophic disturbances will cut off reflex action, as the seat of this influence is known to be in the large ganglion-cells which lie in the anterior horn. Interruption in this case may exist either in the anterior root outside the cord, the short portion within the cord, or in the anterior horn of gray matter itself.

As regards the second of these possibilities, nothing is certainly known that will enable us to localize the lesion in that particular portion of the anterior root.

Ankle-clonus is only present in case of disease, and it signifies that from some cause the inhibitory influence of the higher centers is no longer normally exercised. The natural impulses from above are somewhere interfered with. Sclerosis invading the antero-lateral columns interferes with nervous impulses travelling down this path, and ankle-clonus is marked. Changes in these columns, of several months' duration, are usually permanent, and so excessive a reflex as is represented in ankle-clonus means structural change that will be unalterable.

In spastic functional paraplegia we elicit ankle-clonus, but this is not necessarily an indication of chronicity, and in hysteria[1] we will find increased tendon-reflex. In the latter the cerebral influence is considerable, and this Buzzard thinks is sufficient to inhibit the nervous impulses reaching the spinal centers. The absence, then, of impulses downward through the lateral columns seems to result in an effect upon the tendon-reflex very similar to that occasioned by the resistance to their propagation through the columns which is interposed by the structural changes occurring in sclerosis.

[1] I use this term "hysteria" as differing from functional, according to Bastian, in his recent valuable contribution to the study of hysterical and functional paralysis.

The organic reflexes, viz., the vesical, rectal, and sexual, offer special and important considerations in the study of diseases of the spinal cord as factors in localization. They belong to the independent functions of the cord, and their action is not concerned in volition. Disease may affect each center separately, but usually they are simultaneously affected because of their location. These centers are situated in the lower portion of the cord, the genital centers reaching from the first to the third sacral segment, inclusive. The bladder and rectal centers extend from the fourth to the fifth sacral segment, inclusive. Starr says that they are adjacent to one another, and the sphincters are uncontrollable when the lesion involves the lower three sacral segments. The center then is probably in the two lower. Disease may affect these centers by excessive stimulation, and as a result both the bladder and rectum fail to act normally.

We may have incontinence or retention of urine: incontinence when there is excessive stimulation of the nerves, as in cystitis, and the presence of a foreign body in the bladder, or when, as in children, it is due to spasm of the bladder, or lack of tone of the sphincter. Retention is the result of paralysis, and localizes the lesion in the lumbar region. The rectum is similarly affected. We often note in spinal disease localized in the dorsal region that defecation and micturition are affected; that is, the functions are performed with normal regularity, but the control of the will over these functions is lost. I saw recently such a case. The bladder and rectal centers were unaffected, because they were not included in the diseased area, but, as the patient expressed it, he "could not hold his water, or control his passages," because of dorsal disease.

The sexual reflex controls erection and ejaculation, and is an important one. Impotence is due to destruction of this center, or to inhibition of it, by reason of general spinal weakness. By reason of the intimate nervous connection of the genito-urinary organs with the cerebro-spinal system, we may have nervous disturbances growing out of this reflex arc. The sensory portion of the arc is enormous; the conducting cords which attach the genital organs to the centers are highly developed.

Robinson says that "branches from the second and fourth sacral and the entire third sacral segment go to make up the enormous nerve-supply for such small organs as the genitals." The bladder and rectum also receive branches from this same supply, so that we find the action of the bladder, rectum, and genitals wonderfully harmonious.

In woman we note this dominating influence more than in man, for the great and complicated nerve-supply to the female genitals accounts for the danger of nervous complications and its stubborn pathology. Robinson says: "It may be laid down as a general proposition that the viscera have their normal function in rhythm and the disturbance of the rhythm is what induces disease." It may also be said that the main pathology of the sympathetic is reflex action from some distant viscus. All have noticed the close nervous connection of the genitals with the nervous system. In woman uterine disorders occasion a thousand and one ills, while in man the reflex irritation of disease completely upsets him. The whole spinal disorder is often purely reflex, and we must not overlook the rectum and genito-urinary organs as aids to diagnosis and localization.

Let us now outline the motor and sensory symptoms to be noticed in focal disease of the cord in various regions.

In the cervical region lesions above the fourth segment cause death by involvement of the phrenic nerve. Upper-arm motor symptoms, with disturbances of sensation of the entire trunk and arm, characterize involvement of the fifth and sixth cervical segments. Lower-arm motor symptoms, with disturbances of sensation of the trunk and inner surface of the arm and portions of the hand, denote involvement of the seventh and eighth cervical segments. The dorsal region gives the "girdle sensation" when the lesion is transverse, and this locates the level and determines the segment involved. The various levels are well outlined—the third rib corresponds to the third segment, the nipple to the fourth, while the sixth and seventh are regionally located by the distribution of nerves to the epigastrium; the tenth segment distribution is near the umbilicus, etc. The motor symptoms to be noticed are paralysis of the intercostal muscles in the upper dorsal lesions and the abdominal muscles in the lower.

Lumbar lesions may or may not involve the entire lumbar enlargement. When total anesthesia of the legs, thighs, and buttocks prevails, then the entire lumbar segment is involved. But if the upper portion is alone involved, then we find anesthesia of the thigh, outer portions of the groin, part of the scrotum, and paralysis of the muscles which flex the thigh, including also the sartorius muscle.

If the middle lumbar segments are alone involved, then we have anesthesia of the thigh and paralysis of the muscles which extend the knee and adduct the thigh. The sacral region is indicated by paralysis of the bladder and rectum in lesions extending as high as the fifth sacral segment. When the fourth and fifth sacral segments are involved we have paralysis of the peroneal muscles, and muscles of the leg and foot when higher. Herter says the area of anesthesia in sacral lesions is characteristic, extending from slight anesthesia about the coccyx in the fifth sacral involvement to the saddle-shaped area of the fourth segment, while in the upper segments strips of anesthesia on the back of the thigh, leg, and ankle to the sole and dorsum of the foot are noticed. Lesions of the cauda equina are diagnosticated by outlining the anesthesia, looking for deformities, and in the examination of the cord for purely cord symptoms.

Lesions in this region are due to pressure from fracture of the spine or dislocation, etc. As these cases are of surgical importance, localization should be carefully observed, so that the lesion may be removed. I recently saw a gentleman who had a fractured coccyx, causing pressure on the cauda equina. For eight years he went from sanitarium to sanitarium, seeking relief for spinal irritation and neurasthesia. He did not find relief until his case was found to be a surgical one; operation relieved him.

Again, I would call your attention to Starr's table in localizing the lesions, for by it and with the use of

electricity you can closely define regional location of the lesions in spinal-cord disease.

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CLINICAL MEMORANDA.

LONG-CONTINUED HEMORRHAGE IN THE LATTER HALF OF PREGNANCY, DUE TO DETACHMENT OF A NORMALLY SITUATED PLACENTA, AND ACCOMPANIED BY SEPTIC INTOXICATION: WITH A REPORT OF TWO CASES.

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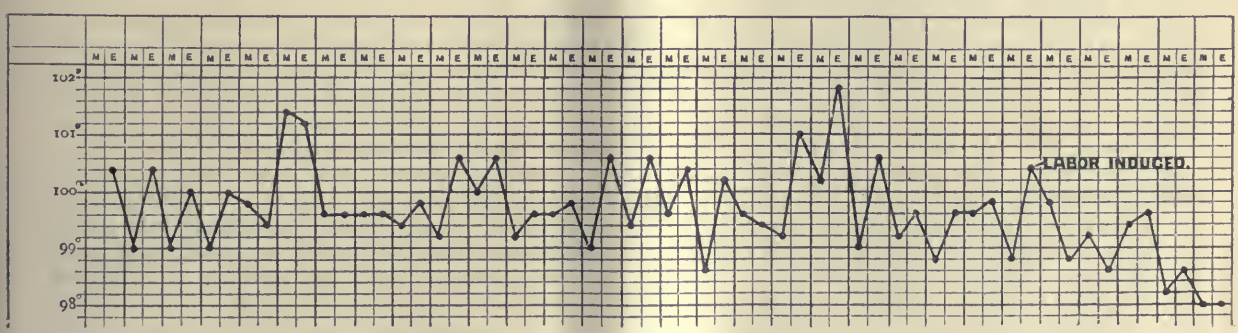
WHEN the practitioner thinks of accidental hemorrhage he usually has in mind a concealed hemorrhage of a very dangerous character, or possibly, a frank outpour of blood, soon ceasing spontaneously or followed by active uterine contraction, the explusion of the uterine contents, and the cessation of bleeding when the placenta is wholly detached and expelled. Premature detachment of the placenta is, indeed, commonly manifested in one of these two ways. Rarely, however, the detachment of a portion of a normally situated placenta is followed by a steady leakage of blood, continuing for weeks, resulting in the formation of a large blood-clot between the layers of the decidua vera, reaching from the lower margin of the placenta to the internal os, as the blood makes its way slowly from the site of hemorrhage to the orifice of the womb. This clot soon begins to undergo a slow decomposition; the products of this process are absorbed, and the woman develops a septic fever, which continues till the uterus is emptied. It is not likely that the general practitioner would be prepared for such cases unless he had happened to see and recognize one, for the text-books in common use among us take no account of them. The two examples here reported, occurring in my practice within the past year, demonstrate, however, the possibility of their occurrence:

CASE I.—I was called to a neighboring State some months ago to see a pregnant woman about six months advanced, who had been bleeding profusely from the genital passages for two or three weeks. The patient was profoundly reduced by the unceasing loss of blood, and when I saw her she had considerable fever, which had probably existed for some time. The physician in charge supposed that the blood was oozing from the cervix itself, and had consequently been painting the vaginal portion with Monsel's solution—naturally without success. An examination threw no light upon the nature of the hemorrhage. The os was slightly patulous, and the child was still alive. With the idea that there was a prematurely detached placenta, and in view of the woman's alarming condition, it was decided to terminate pregnancy without delay. On extracting the fetus, with its appendages, it was found from the tear in the membranes that the placenta had been attached at the fundus. Clinging to about a quarter of its maternal surface was a flattened mass of clotted blood, very dark in color and as firm in consistency as liver. It extended along the membranes to and beyond their point of rupture, the whole making a very large clot. The patient had symptoms of septicemia for a time after delivery, but ultimately recovered.

CASE II.—A. C., a domestic, was admitted to the Philadelphia Hospital in the sixth month of pregnancy. Two weeks before admission she had begun to bleed from the vagina without ascertainable cause. The hemorrhage continued without intermission and in increasing amount, so that she was compelled to go to bed, and thus came to the hospital. She was found to have fever,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ceeded to evacuate the uterus, although the fetus was still alive. The placenta was attached at the fundus. About one-eighth of its surface had obviously become detached some time before (shown by degeneration). To this margin was attached, as in the first case, a long, flat mass of firmly clotted blood, undergoing decomposition. The fever subsided a day or two after delivery, and the woman made a good recovery.

A surprising feature in these cases is the continuance of pregnancy in spite of a partially detached placenta and a huge mass of decomposing blood-clot lying between the membranes and the uterine wall. The appropriate treatment is undoubtedly the evacuation of the uterus. In the first case this was delayed too long, and the patient made a narrow escape. In the second case, I was curious to see how long pregnancy could continue in spite of such unfavorable conditions. I waited, therefore, as long as I dared, half expecting a spontaneous evacuation of the womb at any time, and keeping the patient under constant supervision, prepared to interfere at once should threatening symptoms develop.

248 SOUTH SEVENTEENTH STREET.

THERAPEUTIC NOTES.

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III.

CODEINE SULPHATE.

CURRENT literature would seem to indicate that resort to codeine is more common in Europe than in America; yet those American physicians who have had large experience with both morphine and codeine agree with their trans-Atlantic colleagues in preferring the latter under many circumstances. The dose of codeine laid down in most of the text-books is too large. While the drug may safely be given, if necessary, in doses of from two to six grains, on the basis that its narcotic power is but one-fourth that of morphine, yet, in medicinal usage its dose need not ordinarily be greater than would be the dose of morphine used in the same conditions. I frequently give $\frac{1}{16}$ grain, and rarely exceed $\frac{1}{2}$ grain. The drug should, however, be repeated much more frequently than would be safe with morphine; and one of the advantages of codeine over morphine lies in this safety of frequent repetition. The greatest advantage of codeine over morphine, however, lies in the facts that it is less likely to excite a morbid drug-habit; and that in the unfortunate cases in which its long-continued use becomes necessary, it does not give rise to the distressing results that a corresponding use of morphine often entails. It has thus been used in an endeavor to cure the morphine-habit. As compared with morphine, the sedative and hypnotic effects of codeine are greater, its anodyne and narcotic effects less. In addition, it appears from clinical data to have a special influence upon inflammations of serous membranes, and thus to be useful in checking the spread of pleuritis and peritonitis. Its power to diminish the excretion, and presumably the morbid production, of sugar in cases of diabetes mellitus is well established. Upon the normal secretions its effect is less marked than that of morphine, and in moderate doses constipation, dryness of the throat, diminution of urine, and of perspiration, are not usually produced.

In most of the conditions in which morphine is ordinarily employed, except when it is desired to promptly cause sleep or lessen pain by hypodermatic injection, codeine is to be preferred.

When it is considered advisable to add an opiate to a cough mixture, codeine sulphate may be given in doses of from $\frac{1}{16}$ to $\frac{1}{4}$ grain. Thus, in cases of acute or subacute catarrh of the laryngo-tracheo-bronchial tract, in which there is irritability of the inflamed mucous membrane, leading to more frequent cough than is necessary for the expulsion of morbid products, ten or fifteen grains of ammonium chlorid, with from $\frac{1}{12}$ to $\frac{1}{8}$ grain of codeine sulphate, may be given every two, three, or four hours. When a patient, as a busy man, finds it inconvenient to carry a liquid mixture, this prescription may be made into a mass with powdered extract of licorice and acacia, and dispensed in capsule. A little water should be swallowed with or after the capsule. Another quite useful combination in the catarrhal affections of influenza, in cases of ordinary bronchitis, and in cases of broncho-pneumonia due to exposure especially when there is an associated pleuritis, is the following:

Phenol salicylate, or cinchonidine salicylate	from 3 to 5 grains.
Terpin hydrate . .	" 3 to 5 "
Codeine sulphate . .	" $\frac{1}{12}$ to $\frac{1}{8}$ grain.

Mix. Dispense in capsule.

Dose: One capsule with water every two to four hours.

This, or a similar prescription, is likewise beneficial in the "colds," bronchitic, pneumonitic, and pleuritic, that often retard recovery or cause "set-backs" in cases of pulmonary tuberculosis improving, or apparently well, under hygienic and other appropriate treatment. In simple pleurisies and in rheumatic pleurisies the terpin hydrate may be omitted. In the cough of pulmonary tuberculosis and other chronic conditions, when a sedative is indicated, codeine is always preferable to morphine. It is best given alone in tablets of $\frac{1}{8}$ grain each, the frequency of repetition being governed by the effect. Often one tablet at bedtime, or one early in the evening and another at bedtime, will be sufficient.

In acute tuberculosis codeine is a useful palliative. In tuberculosis and other painful affections of the pharynx and larynx, lozenges containing about $\frac{1}{8}$ grain of codeine in fruit-jelly, mallow, Irish or Iceland moss, or other demulcent, are often soothing and anodyne. In some cases cocaine may be added to such a lozenge.

In my own experience, codeine has not been equal to morphine as an analgesic in neuralgia; but on the other hand, when the pain has been traceable to inflammation, whether of nerve structures or other tissues, codeine has seemed the better agent. When used to control pain it should be given in larger doses than have thus far been spoken of, *i. e.*, from $\frac{1}{4}$ to $\frac{1}{2}$ grain, repeated at intervals of from fifteen to thirty minutes, until effective, either in relieving pain or causing sleep, or until four or six grains have been taken.

In the sleeplessness and headache of acute fevers, codeine may be given in doses of from $\frac{1}{2}$ to 2 grains, repeated every half-hour, every hour, or every second

hour, according to indications. If sleep is not produced by six grains, the drug should be abandoned.

In chronic insomnia of various causation, codeine may be employed in the manner advised for acute cases, or small doses may be given during the day, and one or two full doses at night. If its use is determined upon, it should not be abandoned until a sufficiently long trial had proved its ineffectiveness. It produces a sleep more nearly natural than that of morphine, and the after-effects are not unpleasant. Many alienists commend it highly. In the pains of visceral carcinoma and other hopeless affections, it may be tried before resorting to morphine, and will in many cases be found efficient.

In diabetes it is best administered with hydrogen dioxid, and should be given in ascending doses, being maintained at the point which, with least discomfort to the patient, lessens in the greatest degree the excretion of sugar. The determination of this point is a matter of careful observation and discriminating judgment in the individual case; and all the subjective and objective symptoms must be considered. Some patients do fairly well on a grain or two in the twenty-four hours, while others require six or more grains. While life is usually prolonged, and comfort much promoted, we cannot as yet regard the drug as more than a palliative; yet, recovery sometimes takes place apparently under the influence of codeine. Some patients who exhibit idiosyncrasies to morphine can take codeine with impunity, but this is by no means the rule, and inquiry must be made, and due caution exercised.

A CASE OF VOMITING OF PREGNANCY, RESULTING IN THE INDUCTION OF ABORTION.[1]

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IN presenting the history of this case, it is not because of anything atypical in its clinical course, but rather to emphasize some of the methods of treatment that may be of value in the management of such cases.

Mrs. J., thirty-five years old, tertipara, bore her first child in 1887, her second in 1890. She menstruated first at fourteen, and has since been regular, the flow lasting four or five days, though small in amount. Great pain preceded and accompanied the flow. The woman was of neurotic temperament. She last menstruated November 27, 1892, the flow lasting three days, and being about normal in amount. A slight show was noticed December 25, 1892, and again January 22, 1893. Upon December 26th, when gestation had progressed about four weeks, nausea and vomiting began and continued to a greater or less extent until March 13, 1893. At no time during this period was solid food taken. The emaciation was rapid and progressive, though for periods of from twelve to twenty-four hours the patient would retain small quantities of liquid food, only to be followed by nausea, retching, or the vomiting of bloody mucus, sometimes bile-stained and containing what appeared to be gangrenous masses. All treatment usual in such cases, such as dietetic measures, cocaine, chloral, argentic oxid, morphine, calomel, cerium oxalate, etc., was used without avail.

On March 5th I was asked to see the patient in consultation. She was emaciated, pale, almost cadaveric in appearance, and very nervous. The pulse was 120, small, though wiry, varying from 130 to 140 under the least excitement. She had been confined to her bed for six weeks, vomiting almost constantly, not only everything that was ingested, but also the mucous secretion of the stomach, which was often streaked with blood, together with the gangrenous masses already spoken of. There was a point of exquisite tenderness in the median line in the epigastrium.

Upon bimanual examination I found a uterine tumor about one and one-half inches above the pubes. The uterus was greatly anteflexed, the cervix softened; the bellying of the lower anterior segment was easily recognized, and the canal was somewhat patulous. Neither subjective nor objective fetal movements had been appreciated, but intermittent uterine contractions could be elicited in the usual manner. After this examination I had no hesitancy in saying that the woman was pregnant, notwithstanding the behavior of her menses. I advised that everything, solids, fluids, etc., be withheld from the stomach, and that rectal alimentation be resorted to. I applied a twenty per cent. cocaine solution freely to the portio vaginalis and within the cervix, at the same time introducing my finger to the os internum, after the method of Copeman. This treatment was rigorously carried out for seven days without success, the patient getting progressively worse. Upon March 12th, with counsel, Dr. Cox induced labor by the introduction of ʒj of sterilized glycerin between the membranes. At 6 P.M. of the same day, pains set in, but were insufficient. The membranes ruptured and the bleeding became annoying, though as yet not dangerous. With each pain there was retching, and oftentimes emesis. By 5 A.M. of March 13th the patient was in such an alarming condition from continued loss of blood that Dr. Donaghue was asked to see the case. He immediately tamponed the vagina tightly with iodoform-gauze, thus relieving the hemorrhage. The woman's temperature at this time was 102.2°, her pulse varying from 145 to 160, and being weak, almost imperceptible, and often intermitting.

At 9.30 A.M. I again met Drs. Cox and Donaghue in consultation. The woman's temperature was now 103°, her pulse 170 and almost imperceptible at the wrist. The respirations were sighing in character; the face was blanched, the eyes fixed, the surface cold. Before undertaking operative measures I injected Oj of a normal salt solution at 100° F. into the rectum, most of which was retained, and ʒiv of the same solution into the loose connective tissue below the clavicle on either side. The pulse almost immediately improved in character and volume. Two hypodermatic injections of ♏xx each of tincture of digitalis were also given.

Then, under chloroform, after thoroughly disinfecting hands, parts, and instruments, I emptied the uterus of a pair of four months' male twins, with one placenta. The uterus and vagina were immediately tamponed with iodoform-gauze to prevent further hemorrhage. The patient was in such a critical condition from acute

[1] Read before the Long Island Medical Society, May 4, 1893.

anemia that hypodermatic injections of digitalis, whiskey, and ammonia were resorted to; she was additionally placed in bed, with the hips elevated, and a pint of normal saline solution at 100° F. was injected into the subcutaneous tissue between the scapulæ. The reaction was prompt and satisfactory. The nausea and vomiting immediately ceased with the evacuation of the uterus, and small quantities of champagne were retained. The convalescence, though slow, was entirely satisfactory under the use of stimulants, tonics, and electricity.

As to the management of these cases, induction of abortion is often resorted to before all other methods have been exhausted. In two other cases in which I was consulted, abortion was contemplated, but the woman was saved by rectal alimentation and the introduction of a solid stick of argentic nitrate into the cervix to the os internum. This plan has been more satisfactory in my hands than Copeman's dilatation or the application of cocaine to the cervix.

In my opinion the vomiting in this case was due to the extreme anteflexion of the uterus and the neurotic temperament of the patient.

An interesting fact first brought to my attention by Dr. King, of Washington, is illustrated in the following history. Mrs. S., twenty years old, pregnant two and one-half months, applied to me for relief from distressing vomiting, which the usual therapeutic methods had failed to check. Upon close questioning I elicited the fact that she was having coition at least three times a week. I placed her upon wine-glassful doses of magnesium citrate, and left, with her promise to abstain from intercourse. The improvement was prompt and marked, so much so that, at the end of a week, feeling perfectly well, she again permitted coition, and the vomiting immediately returned, ceasing at once upon abstinence from that unphysiologic practice.

Since then I have had two marked instances of coition during pregnancy acting as the exciting cause of vomiting.

HYPERTROPHIC RHINITIS, PRODUCING OCULAR ASTHENOPIA.[1]

BY EDWARD J. BERNSTEIN, M.D.,
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USUALLY the treatment of asthenopia is a matter of very little difficulty to the surgeon, but there are now and again cases that seem to baffle every effort. I write with the object of calling your attention to a frequently overlooked factor in these cases.

The condition *sine qua non* is that the refraction shall have been thoroughly and efficiently estimated and corrected, and yet relief does not follow. In many such cases an intelligent observation of the nares will explain the mystery. We are all aware of the varied reflex neuroses attributed to pathologic conditions of the upper respiratory tract. Hack[2] ten years ago called attention to supra-orbital and ciliary neuralgia due to nasal troubles. He says: "Apparently unimportant lesions, without special symptoms pointing to the nose, may run their course, accompanied by serious reflex neuroses. Certainly all such neuroses do not have their origin in the nose; but when they do, their relief through surgery is most marked." Götze relates that in Rossbach's clinic, among many other reflex symptoms abolished by reduction of the middle turbinates, were ciliary neuralgia and migraine. Schreiber, Bresgen, Schech, Chiari, Heymann have also related many such instances. Grüning says, in reporting on the same subject, that notwithstanding proper attention to the ocular affection, it remained uncured till the nose was treated, even though no special symptom called attention to this organ.

We readily see the intimate connection between these two organs when we remember that the nervous supply of the nasal cavity comes mainly from the nasal branch of the ophthalmic nerve, which, early in its course, as it crosses the optic nerve, gives off two or three small twigs, the long ciliary nerves, which, joining with the short ciliary nerves from the ciliary ganglion, pierce the sclerotic, and running forward between it and the choroid, are distributed to the ciliary muscle and the iris.

In the following cases I have no hesitation in saying that the refractive error was thoroughly corrected, yet the permanent relief only came through reduction of the hypertrophied turbinates. My attention was first directed to this condition by some remarks of Mr. Lennox Browne, made upon a case which he was treating for ciliary neuralgia.

CASE I.—Mrs. M., thirty-two years of age, a pale, nervous woman, with a history of tuberculosis in her family, was sent by her physician for treatment for asthenopia. Any prolonged effort at sewing or reading brought on excessive pain and fainty feelings.

V. = R. E., 6/v? L. E., 6/vi? H. manifest, R. E., + sph. 1.25 D; L. E., + sph. 1.50 D.

The ophthalmoscopic examination (seen with + 1.50 D) showed the fundi normal.

By retinoscopy, under homatropine, I found + sph. 1.50 D.

I estimated the refraction to be as follows:

R. E., + sph. 1. D ⊃ + cyl. 0.25 D, ax. 90° = 6/vi.

L. E., + sph. 0.75 D ⊃ + cyl. 0.75 D, ax. 90° = 6/vi.

I then ordered these lenses, which she wore persistently. In a month she returned, complaining that she had no relief. I went over the examination again, and got the same results. I then reduced the strength of the glasses in various ways, but without any permanently good effect. During the visits the statement was made that she had had some catarrhal troubles some years ago, which had been successfully treated, she said, by Dr. Arnold, now of San Francisco. On examination, the middle turbinated bodies were found firmly impacted between the septum and the outer wall of the nares. On palpation, they were found to be excessively sensitive, and gave her the same pain experienced in prolonged usage of the eyes. She also complained of dryness of the throat. The mucous membrane of the pharynx was in a state of granular degeneration. Cauterization of the turbinates with the electro-cautery and chromic acid and application of Schech's iodin solution to the pharynx soon brought about a change. She now uses her eyes

[1] Read before the Section on Ophthalmology, Otology, and Laryngology of the Maryland Medical and Chirurgical Faculty, April 27, 1893.

[2] Hack: "Reflex Neurosen und Nasenleiden," Berlin. klin. Wochenschr., 1882.

with comfort, wearing convex cylinders only for the refraction error. I may say that no muscular imbalance worthy of correction could be discovered.

Case II.—Mrs. B., thirty-eight years of age, a robust woman, not of a nervous temperament, complained of asthenopia, which had not been successfully treated. On examination, I found mixed astigmatism, and no esophoria or exophoria, but hyperphoria of 2°. Examination showed the discs to be elongated and bounded by a small temporal crescent. The macular reflex was normal, as well as other portions of the background. I ordered:

R. E., + sph. 1. D ⌒ — cyl. 2. D, ax. 80°.
L. E., + sph. 1.25 D ⌒ — cyl. 2.25 D, ax. 80°.

These glasses were worn with greater comfort than she had yet obtained. She returned in three months, saying that although much better, she still did not have absolute comfort. Thinking to correct the hyperphoria, I made the necessary examination, but could not now discover it. I examined the nose and found the same condition of the middle turbinates as in the case first reported, with secondary involvement of the pharynx. These conditions were treated in the usual manner, with absolute relief of all symptoms.

A third case, in the wife of a prominent physician, there was compound hypermetropic astigmatism of one eye and a low degree of simple myopia of the other, has thus far had no relief from any glass I could give her. She has, besides the refractive error, 3° right esophoria and 4° left; but no hyperphoria. The patient is of a very high-strung, nervous temperament, and very little could be accomplished at any one stitting. I examined the nose and found hypertrophic rhinitis and the pharnyx secondarily involved. The slightest touch of the wool-covered probe induced intense pain in the orbital and supra-orbital regions. Treatment of the nose was begun, but was interrupted by an intercurrent attack of illness. There is not a shadow of doubt in my mind that the main cause for her asthenopia will be found in the nasal cavity.

I wish to indorse the conclusions of Dr. de Schweinitz in his article on the subject in The Medical News of April 2, 1892, to which I would refer the reader.

218 W. Franklin St.

MEDICAL PROGRESS.

Successful Unilateral Laryngectomy for Carcinoma.—Monks (*Annals of Surgery*, vol. xviii, No. 1, p. 18) has reported the case of a photographer, thirty-nine years old, who had been hoarse for about a year and presented thickening and redness of the right vocal band, with decided limitation of movement during respiration and phonaton. The man otherwise appeared quite well and strong. There had never been much marked pain in the throat or difficulty in swallowing, and there was no cachexia; neither was there a family history of carcinoma. The growth was apparently confined to one side of the larynx and no enlargement of the cervical glands could be detected. Other measures failing to afford relief, operation was deemed justifiable. Accordingly, a vertical incision was made in the median line, from the hyoid bone to about an inch and a half below the cricoid cartilage; and at right angles to the first, a second incision, upon the right side of the neck, at about the level of the lower border of the thyroid cartilage. After the thyroid and cricoid cartilages on the right side had been laid bare the adjacent right half of the back of the cricoid was separated from the anterior wall of the esophagus, so that after the operation was finished the esophageal wall might be left intact as high as possible, and the liability to regurgitation of food diminished. The trachea was opened at the lowest part of the wound, just below the cricoid cartilage, and a large-sized silver tracheotomy-tube inserted. The whole larynx was then split in front, in the median line, and the two halves held apart while gauze was packed firmly into the lowest part of the cavity upon the tracheotomy-tube. The entire right half of the larynx was now removed, the incisions beginning from below. The right half of the trachea was first divided just below the cricoid cartilage; then, with the knife within the larynx, the posterior part of the cricoid cartilage was split vertically in the median line. The thyroid cartilage was next carefully separated from its attachments to the soft parts behind and the thyro-hyoid membrane was divided. Lastly, the superior cornu of the thyroid cartilage was pulled down and excised. In this way the entire right half of the larynx was removed, including one-half of the thyroid and cricoid cartilages, the crico-thyroid membrane, the right arytenoid cartilage, the right vocal band and other soft parts. As much as possible of the epiglottis was permitted to remain. A portion of the growth, which had extended across the median line in front, was additionally removed. Through the upper part of the wound, which communicated with the pharynx and esophagus, a large-sized soft-rubber stomach-tube was introduced well down into the esophagus. Around the tube iodoform-gauze was packed and the edges of skin approximated by silk sutures. Histologic examination of the specimen disclosed the structure of epithelioma. After the lapse of twenty-four hours a catheter was substituted for the stomach-tube in the esophagus, liquid nourishment being thus administered. A glass tube, surrounded by an inflated rubber jacket, was likewise substituted for the silver tube in the trachea. This was removed permanently on the fifth day. On the ninth day bits of beefsteak were chewed and swallowed with evident relish, but the catheter was continued for liquids. On the tenth day the patient sat up in a chair for a while, and was able to speak in a whisper by closing the opening in the neck. Subsequently, as the opening manifested a tendency to close, an ordinary tube was placed in the tracheal wound. Soon after leaving the hospital the patient was able to swallow liquids without the presence of the tube and without regurgitation, by exercising slight pressure upon the opening in the esophagus. The patient was well a year after the operation and engaged in his previous occupation. The tube was worn constantly, being held in place by tapes, and its outer opening closed by a cork.

Nocturnal Laryngeal Spasm in an Adult.—Herschell (*Lancet*, No. 3637, p. 1129) has reported the case of a literary man, thirty-six old, of markedly neurasthenic temperament, who for eighteen months had suffered from attacks of spasm of the larynx at night. At first these occurred about twice a week, on some nights two attacks taking place. Under appropriate treatment the

attacks ceased for a time, but returned upon relaxation of hygienic measures. The attacks usually occurred after late dinners and over-indulgence in cigars. They set in about 2 o'clock in the morning, when the man is awakened with a sense of suffocation, from spasm of the larynx, which prevents inspiration. This continues for a few seconds, when the spasm partially relaxes and air is drawn into the larynx with a crowing sound. After nearly a minute the spasm entirely relaxes, but the larynx feels sore and uncomfortable for an hour or two. During the attack the heart beats violently, while afterward the stomach is found tympanitic and distended. Eructation of gas is followed by relief and brings the attack to an end. Often there appears a spasmodic condition of the orifices of the stomach, which prevents the expulsion of the flatus upward or downward. There was no evidence of disease of the heart, vessels, or nervous system.

Parotiditis Complicated by Orchitis, Prostatitis, and Hemoptysis.—COMBY (*L' Union Médicale*, No. 61, p. 725) has reported the case of a gardener, twenty-nine years old, who, after having worked all day in a hot-house, was seized at night with a chill; the right testicle was noted to be swollen, red, heavy, and painful. During the night there occurred sweats, with headache, pain in the back and in the extremities, so that sleep was prevented. There was also evidence of the existence a mild prostatitis. On the following day delirium set in, and a day later still painful swelling appeared in both parotid regions. There were fever and dyspnea, and in the midst of a paroxysm of coughing, profuse hemoptysis occurred. Improvement now soon set in, and in a short time the man was convalescent. Examination of the chest failed to disclose evidence of organic disease; neither did the urine present any abnormality. The treatment employed consisted in the administration of quinine sulphate, purgation, the application of emollient compresses to the testicle, and a milk-diet.

Ulceration of the Mouth, of Tabetic Origin.—At a recent meeting of the Paris Society for Dermatology and Syphilography, HUDELO (*Internat. klin. Rundschau*, 1893, No. 25, p. 942) demonstrated a tabetic who presented two areas of ulceration of the mouth corresponding with the left inferior maxillary nerve and the right superior maxillary nerve. The affection had set in a year previously, and began with a painless loss of the teeth, after which the ulcers formed. There was nothing in the family history to explain the occurrence; there was also no history of phosphorus-poisoning; and, although the man had had syphilis, the ulcers did not present the appearances or pursue the course of syphilitic lesions. The ulceration was considered as related to the posterior sclerosis and to be dependent upon an inflammation of the fifth pair of cranial nerves. The skin of the face and the mucous membrane of the mouth were anesthetic.

THERAPEUTIC NOTES.

The Treatment of Inebriety.—At the Twelfth Congress for Internal Medicine, recently held at Wiesbaden, SMITH (Supplement to *Centralbl. f. klin. Medicin*, 1893, No. 25, p. 90) pointed out that the stage at which chronic alcoholism usually comes under the observation of the physician presents two distinct features: (1) A psychic degeneration and depravity, affecting the character, with an extinction of all energy, so that it is impossible for the victim, from his own resources, to rid himself of his condition—inebriety proper; and (2) a series of organic and systemic changes engendered by, but not peculiar to, the alcoholic poison, and the symptoms of which are referable to demonstrable pathologic changes. In view of the psychic condition, it is essential that the patient be placed in an institution devoted solely to the treatment of inebriety. Such an establishment should be situated in the country and isolated from all external communication. It should be under the care of a physician, in whose family the use of alcohol in any form should be rigidly proscribed. There should be no actual restraint, but the most vigilant supervision should be exercised. The institution should be equipped with apparatus for Swedish resistance gymnastics, and opportunities should be afforded for light and useful occupation, such as wood-turning. To be efficient and permanent, the treatment must be continued for a period of from six to twelve months, and in cases of periodic inebriety and other severe varieties for eighteen months. Of the whole number of cases under treatment at Marbach 30 per cent. were cured; of those that remained under treatment for more than six months the proportion of recoveries was 80 per cent. The essential element of treatment is immediate and rigid abstinence. Should manifestations of delirium and collapse appear camphor should be given. After several months of treatment the character of the patient will have changed for the better. Upon dismissal, his future associations should receive thoughtful consideration. Such incurable conditions as alcoholic dementia, alcoholic paranoia, and profound alcoholic mania will necessitate detention in an insane asylum, as well as such cases in which the alcoholism is but a manifestation of moral irresponsibility. Among the curable conditions in which degenerative changes in the central nervous system have taken place may be included alcoholic melancholia, pseudo-paralysis, and pseudo-tabes. Epilepsy and periodic inebriety, however, require treatment of especially long duration.

For Asthma.—

℞.—Potassii iodidi . . . . . ℥ss.
Potassii chlorat. . . . . ℥j.
Tinct. lobeliæ . . . . . f℥j.
Syrup. diacodii . . . . . f℥j.
Aquæ . . . . . f℥iv.—M.

S.—A tablespoonful every hour.

Rif. Med.; Münch. med. Woch.

For the Cough of Pertussis.—

℞.—Ext. belladonnæ . . . gr. j.
Aluminis . . . . . ℥ss.
Syrup. zingiberis, Syrup. acaciæ, Aquæ } . . āā f℥j.—M.

S.—A teaspoonful thrice daily, or when the cough is distressing.

The Practitioner.

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SATURDAY, JULY 22, 1893.

MEDICAL MEN IN UNIVERSITY SETTLEMENTS.

THE United States Department of Labor is investigating the condition of the slums of Chicago. Officially the term "slums of Chicago" is applied to about a half a square mile of the city, bounded by State, Twelfth, Halsted, and Polk Streets. The investigation of this section includes a plan made to a scale of every floor of every tenement and inhabited building, and a thorough census of the inhabitants themselves. This district has been found to contain 16,000 residents, and the plans show four bath-tubs. Two of these bath-tubs, however, are disconnected from the water-supply. In this district and in the regions immediately surrounding it there are no public baths.

When such conditions come to light a picture of probable concomitant conditions immediately flashes upon the mind of the physician whose practice has made him familiar with such neighborhoods. In this particular case, we reflect that about one-third of the clothing manufactured in Chicago is made in the "sweat-shops" in this neighborhood. We remember that a great part of the "scab cigars" (*i.e.*, those not made in union shops) are made in these dirty tenements by the unwashed inhabitants. Here live a great proportion of the rag-pickers of the city, and here they house their merchandise. In one of these tenements, a year ago last winter, in a room twelve by eighteen feet, a family of six worked, cooked, and slept while they finished a lot of knee-pants. The whole family worked almost day and night for four days in order to finish a job and get money to pay for the burial of a child that had lain all of that time on a pile of stock in one corner, dead of scarlet-fever. In one of these tenements, where sixty-two women and children live on three floors, forty-nine men sleep in a basement twenty-five by ninety feet. This cellar has three windows, two in one end and one in the other, only two of which can be opened.

It is difficult for the physician to do what may seem to him his duty in the light of such conditions as these, to be found in all of our large cities. He may be indifferent to, wilfully ignorant, or negligent of these hotbeds of physical and mental disease and distress. He may take these woes to heart, and work in a small way to stop the overflowing tide of misery and suffering that he sees damming up against the future. He may, besides, inquire into the etiology, the course, and the treatment of the social and the economic malady of which these sad conditions are symptoms. He may look into the diseases of other communities and other times, and consider the result of effort to relieve, tried elsewhere. The young, philanthropic physician, the prophet who has studied medicine for love of man, cannot find a richer field for work and study than the slums of our great cities. Asia is not so inexhaustible, Africa is not so dark, and Oceanica is not so monotonous as these deserts of human life, hope, and health. The way for knowledge and good seems to be opened in the "University Settlements," in quiet, unostentatious life, work, and study among these unfortunate and hopeless people. The efforts that have been made in this direction have been made almost entirely without the aid of physicians. In the few settlements in this country there is no physician. No other resident, we believe, could so easily earn his living while at work, yet the prophet has not appeared. When he does come he will be an officer of the department of Health; he will attend the dependent and needy poor; he will help to secure the enforcement of the tenement-house laws and the factory laws; he will instruct the poor in the care of the house, and the choice of food, and in the care of the body; he will help the sick, and by means of coöperative organizations, provide for women in approaching confinement; he will study and record

the conditions and tendencies he finds in his daily occupation, and report them through proper channels; he will try to bring the knowledge of the condition of tenants to the minds of landlords and landladies, and secure some betterment of properties; and, when other means fail, he will aim to secure laws to compel humane treatment of man by man.

THE MEDICAL CORPS OF THE UNITED STATES ARMY.

IN the overcrowded condition of the profession, together with the resultant limitation of opportunity in private practice, the recent graduate in medicine will find much to attract him to the Medical Corps of the United States Army. The standard of requirements is of course elevated, and the appointment is, therefore, the more highly to be prized. Recent innovations, to which allusion has already been made (THE NEWS, July 8, 1893, p. 51), have, besides, greatly elevated the desirability of the positions in the Corps.

In the organization of the Army Medical School four professors will be selected from among the senior medical officers of the army stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses, microscopic technic, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of:

1. A *President of the Faculty*, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights, and privileges, customs of service, etc.).

2. A *Professor of Military Surgery* (including the care and transportation of wounded).

3. A *Professor of Military Hygiene* (including practical instruction in the examination of air, water, food, and clothing from a sanitary point of view).

4. A *Professor of Clinical and Sanitary Microscopy* (including bacteriology and urinology).

The position in the Medical Corps is a most honorable one. The pay and emoluments are quite reasonable, while original investigation and study relating to scientific medicine or hygiene will receive due encouragement.

There are at present five vacancies in the Corps, and five more will occur within a year. To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education" by a medical officer of the army stationed most conveniently for this purpose. This will enable those who would be rejected on account of physical defects, or whose preliminary education is unsatisfactory, to ascertain the fact without going to the expense of visiting a distant city for the examination, and will save them the humiliation of being known at home as rejected candidates. It will also diminish the number of rejections by the board. There has been a mistaken idea, due to the large number of rejections, that the examination is unreasonably severe; as a matter of fact this is not the case, and the considerable number of rejections has been due to the fact that a large number of applicants have been men whose English education was defective and who have appeared before the board without having made any special preparation for the examination in professional branches.

A BUREAU OF PUBLIC HEALTH.

UNITED effort on the part of the medical profession seems likely to lead to the establishment of a Bureau of Public Health, of the necessity of which the recent cholera-scare must surely have furnished sufficient demonstration. It is not alone, however, for imported disease that some central form of health-organization is absolutely necessary, but also to secure uniformity and harmony, and thus greater efficiency, of action with regard to measures for the prophylaxis and management of disease within our borders. The American Medical Association has created a committee which is charged with the duty of promoting the establishment of a Bureau of Health, and now a sub-committee of the National Quarantine Committee of the New York Academy of Medicine has been instructed to prepare a bill, to be submitted to Congress, creating a Public Health Organization in the General Government. With a view of harmonizing conflicting opinions as to the plan of organization, and in order to concentrate upon a single measure the efforts of all interested in securing the necessary legislation, the committee has

prepared the sections of a bill organizing a Bureau of Public Health, which is tentatively submitted for the purpose of eliciting a full and free discussion of the subject before the precise form to be adopted is finally decided upon. The bill provides for the grouping of the States and Territories into nine sanitary districts, and the establishment of a commission of fifteen, of whom eleven are to be appointed by the President, one from each district, and two at large, the other four members to be the Surgeon-General of the Army, the Surgeon-General of the Navy, the Supervising Surgeon-General of the Marine-Hospital Service, and an officer, learned in the law, detailed by the Attorney-General from the Department of Justice. Argument seems superfluous. A Bureau of Public Health is indispensable to the welfare of the country. This once admitted, the details of organization and execution will demand separate consideration.

EDITORIAL COMMENTS.

Albuminuria as a Result of the Act of Parturition.—Modern obstetrics has done much to clear up the pathology of the gravid, parturient, and puerperal conditions. Perhaps the greatest amount of discussion has centered about the condition that for want of a better name is called eclampsia. A knowledge of the etiology of this condition would practically mean also a recognition of the means of its prevention and treatment. Many clinicians admit that there may be a physiologic albuminuria, as, for instance, after the taking of albuminous food and after active physical exercise. Recent observations by AUFRECHT and FRIEDEBERG (*Centralblatt für klinische Medicin*, 1893, No. 22, p. 457) demonstrate that transient albuminuria may occur in women as a result of the act of parturition. The observations were made upon healthy puerpera, free from gonorrheal infection, and were conducted as follows: The urine was examined in the usual manner before the onset of labor. In case the woman was in labor at the time of entrance into the hospital and was unable to spontaneously evacuate the bladder, the urine was withdrawn by means of the catheter, the most scrupulous aseptic precautions being observed. The urine was withdrawn by catheter at the conclusion of labor and again examined. In cases in which the urine presented any abnormality the examination was repeated twenty-four hours after the conclusion of labor. Thirty-two puerperal women were examined in the manner outlined. In none did the urine contain albumin before the occurrence of labor. In eighteen, however, albumin was found after labor in varying proportion; in none were tube-casts found, and in but one a small number of red-blood corpuscles. It thus seems reasonable to infer that the albuminuria is a result of the activity of labor, perhaps through venous stasis from the pressure upon the abdominal viscera and forced expiration with closed glottis. The practical lesson to be learned is that the urine should be faithfully and repeatedly examined immediately before labor, and, if albumin be present, that untoward symptoms should be carefully looked for, on the appearance of which the labor should be terminated as quickly as possible. This injunction applies with special emphasis if eclampsia (which is almost invariably associated with albuminuria) has appeared. If artificial labor is not practicable chloral hydrate is perhaps the next most useful agent.

Shamelessness Extraordinary.—From a widely-scattered circular, appealing to the morbid fears of the sexual hypochondriac in the customary language, we quote:

"In all cases where the organ is small, or where it has become relaxed through self-abuse, disease, or age, the conjestor, developing liniment, and nerve seeds should all be used at the same time.

The price of the conjestor is	$10 00
Three bottles of developing liniment . .	5 00
Six packages of nerve seeds	5 00
One suspensory bandage	2 00
	$22 00

"When the whole course of treatment is ordered at one time, we will prepare and send by express to any address on receipt of $20.00."

It is fully explained in other parts of the circular that the "conjestor" acts like a cupping glass, the air being exhausted, etc. The drug stores are acting as local agents in this execrable traffic. Is there no city law or State law in Chicago to stop it?

The Value of the Hands and of the Fingers.—Surgeons have often to estimate the chances of saving injured hands, and the comparative values of hands and fingers. According to a scale of value furnished by the Miners' Unions and Miners' Accident Insurance Companies of Germany, the loss of both hands is valued at 100 per cent., or the whole ability to earn a living. Losing the right hand depreciates the value of the individual as a worker 70 to 80 per cent., while the loss of the left hand represents from 60 to 70 per cent. of the earnings of both hands. The thumb is reckoned to be worth from 20 to 30 per cent. of the earnings. The first finger of the right hand is valued at from 14 to 18 per cent., that of the left hand at from 8 to 13.5 per cent. The middle finger is worth from 10 to 16 per cent. The third finger stands least of all in value; although, like other useless members of the community, it is surrounded by riches, its value is only from 7 to 9 per cent. The little finger is worth from 9 to 12 per cent. The difference in the percentages is occasioned by the difference in the trade, the first finger being, for instance, more valuable to a writer than to a digger.

Abolish the Cellar.—In a recent number of *The American Architect*, Mr. Edward Atkinson deals with the financial and architectural aspects of the question, *Cellar or No Cellar?* and easily shows that *no cellar* is by all odds preferable. The article proceeds upon the assumption that the influence of the cellar on health is pernicious—a truth that will hardly be doubted by hygienists. Almost every observant physician in general practice has met with cases of obstinate malaria and

various forms of ill-health that were probably or certainly due to the gases arising from the dank, undrained, unlighted hole beneath the house called a cellar. Of what possible use can such a hole be to a family if a house were rightly constructed is beyond human ingenuity to discover. In addition to its inevitable condition and quality, it is often also made the dumping-place of ashes, refuse, and all sorts of household débris. Now that it is proved not to be necessary, either from financial or architectural reasons, let the noisome nuisance be abolished!

Supernumerary Breasts and Multiple Pregnancy.—At a recent meeting of the Paris Société Médicale des Hôpitaux, MARIE (*La Semaine Médicale*, No. 38, p. 303) showed the photograph of a young woman who presented a supplementary nipple of the left breast. This anomaly had been the rule in the family of the woman through at least four generations. It was also an interesting fact that of eleven brothers and sisters four were twins, and that of fifteen brothers and sisters of the woman's father six were twins, and these alone presented the supernumerary nipple. This observation would seem to indicate that there is a correlation between the existence of supernumerary breasts and multiple pregnancy, and that the condition is not a simple erratic malformation, but an atavistic reversion to an ancestral type. That the faculty of multiple procreation does not reside alone in the female is demonstrated by the fact that the father of the patient begot two pairs of twins, and that one of his brothers (also a twin) begot at least one pair of twins.

Yellow Fever in Georgia.—From the *Abstract of Sanitary Reports* we learn that the captain of a sailing bark died June 25th, of yellow fever, on the Satilla River, near Brunswick, Ga. The local health officer was authorized by the Surgeon-General of the Marine-hospital Service to transfer twenty-five laborers who had been loading the vessel to Sapelo Quarantine for detention and observation. It appeared that the vessel had entered Havana on May 19th, and had unloaded in the open bay, no one going ashore but the captain. She sailed from Havana on June 9th and reached Satilla on the 15th. All hands had been well at Havana, during the voyage, and upon arrival. The vessel was discharged from quarantine June 19th, after being fumigated, and was towed to Satilla on the same day. The master was taken sick on June 21st, and a day later transferred to a camp eight miles in the country on the Satilla.

Responsibility for Negligence.—If a physician by the slightest negligence permits the death of a single patient he is held responsible for the death by the law and is punished accordingly.

And justly so!

If a public officer by the grossest neglect causes the deaths of many people (as in the disasters of Ford's Theater, the Coney Island Railroad accident, the holocaust at the World's Fair, etc.), nobody seems to be to blame, leastwise nobody is punished.

Is justice a matter of party and profession?

Long-lived People.—An English investigator has examined the habits of centenarians. They were almost invariably lean people, of spare habit, and of great moderation in eating and drinking. Of thirty-seven, three took no animal food, four took very little, twenty a little, ten a moderate amount, and only one acknowledged taking much meat. With regard to alcohol, the returns are much the same, and abstemiousness is found to be the rule of life with these centenarians. Fifteen had been total abstainers, either during the whole or part of their lives; two took very little alcohol, twenty-two a little, and ten a moderate amount.

Bacteria in the Soil at Different Depths.—Some investigations carried out by Dr. Alexander A. Houston, of Edinburgh, respecting the number of bacteria in the soil at different depths from the surface, go to prove that the microörganisms become less and less abundant as the depth from the surface increases. For example, the average number of germs in a gram of soil examined, which was taken from the surface, was 1,687,799; at a depth of three feet this average fell to 173,807; and at a depth of six feet it was only 410. These figures are interesting, and would tend to show that at certain definite distances from the surface the soil would be sterile.

Wild Animals and Snakes in India.—From a recent number of the *British Medical Journal* we learn that in 1891 24,300 persons were destroyed by wild animals and snakes in India, as against 23,801 in 1890. By far the larger proportion of deaths was due to snakes—more than 21,000 in each case. Cattle also suffered largely, but wild beasts are more fatal to them than snakes. The number of deaths relatively to population was from wild beasts 1 in 74,597 and in snakes 1 in 10,166.

A Valuable Constituent of the Human Body.—A chemist computes that at the present market value, the average human cadaver contains something like eighteen thousand dollars worth of calcium. But, like the fabulous values of aluminum in clay, or of the gold in seawater, the cost of extraction at present prevents all profit to the would-be enterprising manufacturers, and the schools of anatomy will have no immediate cause for alarm as regards commercial competition.

Physiologic Examinations of School-Children of Washington are being made in order to determine the comparative rates of growth, influence of nationality, school hygiene, density of population, systems of physical culture, etc. Special measurements of the nervous system with the esthesiometer, dynamometer, baresthesiometer, and thermesthesiometer, are being made by Dr. MacDonald, to estimate the proper amount of study required, the proper age of advancement, etc.

A Husband's Consent not Necessary to an Operation on His Wife.—In a recent English case, in which a woman consented to have an operation performed, the husband's refusal did not reach the surgeon until the death of the wife, from chloroform. It was decided that in such instances the husband's consent was not legally necessary. But if not legally a prerequisite, should it not have been ethically required—provided, of course, the case was not one of great urgency?

An Aluminum Drainage-tube.—The use of aluminum in the arts is constantly extending. The advantages of the metal are essentially its lightness, its cheapness, its freedom from corrosion, and its pliability. One of the latest purposes to which it has been adapted is the making of drainage-tubes, the credit of which belongs to Dr. F. B. Robinson, of Chicago.

REVIEWS.

MANUAL OF CHEMISTRY. A GUIDE TO LECTURES AND LABORATORY WORK FOR BEGINNERS IN CHEMISTRY. A TEXT-BOOK, SPECIALLY ADAPTED FOR STUDENTS OF PHARMACY AND MEDICINE. By W. SIMON, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Baltimore, and Professor of Chemistry in the Maryland College of Pharmacy. New (fourth) edition. 8vo, pp. 490. Philadelphia: Lea Brothers & Co., 1893.

THE appearance within a year of another (the fourth) edition of Professor Simon's work indicates that our favorable opinion of the book, as already expressed, is shared both by teachers and students. The new and unique feature of representing color-reactions and colored precipitates by artistically produced illustrations is attractive, and cannot fail to become part of an object-lesson, so necessary for the successful study of chemistry.

The author has only in part accepted the uniform system of orthography and nomenclature for chemical terms recommended by the American Association for the Advancement of Science. In text-books such changes, however much they are to be desired, will be gradual.

The fifth part of the work, devoted to analytic processes, deserves favorable mention, and though the methods might have been entered upon more fully, this is hardly to be expected in a book of such compass as this.

The classification of the hydro-carbon derivatives is not in keeping with the usual custom of teaching them according to their production, first, by halogen substitution, and subsequently increased oxidation. This will, probably, make their study more difficult, as the student will lose sight of the systematic manner in which they are connected, and will have to impress them on his mind as isolated facts.

The consideration of the ptomaïnes, leukomaïnes, and toxalbumins, as well as the different albuminoids, together with the animal ferments, is an evidence that the author has kept his work up to modern advances.

The most important improvement and changes are found in Part VII, on Physiological Chemistry, which is of interest to the physician and student. The food-metamorphoses and the animal fluids and tissues are well treated; the introduction of the chemical study of the gastric juice is to be commended, though researches in this direction have been so great that it is hardly to be expected that a book like this should do full justice to the subject. The chemistry of the milk, as well as that of the urine, has been much enlarged, and, though some features might to advantage be introduced in the analysis of the urine, such as polarimetry and Haycraft's method for the determination of uric acid, the improvement in this direction has been very marked.

By frequent editions of this work Professor Simon has been enabled to perfect it so that it can be said to rank with the best text-books on pharmaceutic and medical chemistry in this country.

DISEASE IN CHILDREN. A MANUAL FOR STUDENTS AND PRACTITIONERS. By JAMES CARMICHAEL, M.D., F.R.C.P., Ed., Physician to the Royal Hospital for Sick Children; University Lecturer on Disease in Children, Edinburgh. 8vo, pp. xvi, 591. New York: D. Appleton & Co., 1892.

ATTENTION is at once attracted by the title of this work, "Disease *in* Children," in contradistinction to the diseases of children. In the text it is aptly pointed out that "It is not strictly correct to talk of diseases *of* children, as we would of women, who suffer from ailments peculiarly their own." The subject is considered in forty-five chapters and an appendix. A strange distinction is made by which typhoid fever, typhus fever, measles, Rötheln, diphtheria, varicella variola, vaccinia, erysipelas, epidemic cerebro-spinal meningitis, pertussis, and croupous pneumonia are considered as "fevers" and tuberculosis and syphilis as "infective diseases." There are numerous other evidences of the struggle to break away from early precept and the traditions of a previous generation. Thus, it is recorded that "diphtheria is essentially a miasmatic" disease; eleven pages are devoted to a discussion of scrofulosis, which is considered as an indication of "a disposition or tendency to certain definite pathological evolutions, a diathesis in which, under varying conditions, certain tissues become affected with diseased [disease-] processes of a peculiar type, constituting the scrofulous cachexia"; "tuberculosis of the lung" is said to be "usually a local expression of general tuberculosis," and is discussed under the subdivisions "acute phthisis," "chronic phthisis," and "caseous broncho-pneumonia or catarrhal phthisis." On the other hand, we find a general and almost unreserved acquiesence in the germ-etiology of the diseases commonly accepted as infectious; and in the same tendency true croup and laryngeal diphtheria are considered synonymous terms. An excellent and comprehensive scheme of clinical examination is given which we can heartily commend, for we are among those who believe that examinations and records can never be too fully or too carefully made. We are convinced that more mistakes in diagnosis result from carelessness of investigation than from ignorance. Under the treatment of scarlatina it is stated that "three methods deserve notice: isolation, disinfection, and inoculation. The last method has not yet been accepted by the profession, but it is certainly warranted in principle, if a modified or attenuated virus could be obtained, which, by inoculation, would confer immunity from the disease. Experiments in this direction have already been made by Dr. Strickler, in America, who inoculated children with virus obtained from the horse supposed to be suffering from scarlatina or an allied disease. The children contracted local sores at the point of puncture, and some degree of lymphatic enlargement in the neighborhood, and subsequent immunity from the disease after exposure to infec-

tion." We have in the foregoing noted most of the points by which we were especially struck in a reading of the work; there is, however, a good deal to commend. The various sections are well written, and bear the stamp of large experience and careful observation.

A TREATISE ON RUPTURES. By JONATHAN F. C. H. MACREADY, F.R.C.S., etc. With twenty-four lithographed plates and illustrations in the text. 8vo, pp. 442. Philadelphia: P. Blakiston, Son & Co., 1893.

As surgeon to the City of London Truss Society, Mr. Macready has enjoyed special opportunities for the study of hernia in its various forms, as well as of the methods of its treatment and their results. In the present work he not only gives the teachings of his own experience, but has drawn on his very extensive acquaintance with the literature of the subject, ancient as well as modern. With these resources he has prepared a most valuable treatise, so clearly written that a tyro may read it, and yet so comprehensive that a practitioner of long standing may find instruction in it.

The author expresses his preference for the term "rupture," as indicated in the title given. We must confess that his reasons for this seem to us insufficient. The word "hernia" has, indeed, been sometimes misapplied; but, as he admits, the word rupture conveys an incorrect idea of the pathology of the affection, and is perfectly proper when employed to designate, for example, the tearing of a muscle or a vein.

The arrangement of the subject seems to us very philosophic. Part I, embracing thirty-three chapters, deals with conditions not involving disturbances of the function of the bowel. Part II contains seven chapters, and is devoted to those in which that function is interfered with. Of course, the two are not absolutely distinct, but they are sufficiently so for the practical purpose of discussion.

Another good feature of this book is the placing at the end of each chapter of the references contained therein, they being indicated in the text by numbers in small type.

The various forms of hernia are well and clearly described. As to the theories of the production of such lesions, the long mesentery theory, the dragging theory, and the theory of pressure from within, we agree with our author in favoring the last-named.

An interesting exposition is given of a matter that too often escapes the notice of surgeons—the changes of shape that the abdomen undergoes in cases of long-standing hernia, especially in persons in advanced life.

So far as can be judged from the illustrations and descriptions in this work, we should judge that the trusses in use in England are much more complex and clumsy than those generally employed in this country. And we think our author has laid too little stress upon the importance of accurate fitting of the whole apparatus. It is not the amount of force, but the exact application of it just where it is needed, that makes a truss efficient.

As to the radical cure of hernia by operation, the different methods are clearly though briefly described; and while no one procedure is specially advocated, preference seems to be given rather to those by open wound than to those that are done subcutaneously.

The illustrations are excellent. The book is well and accurately printed, and will doubtless be accorded the favor that it fully deserves.

HANDBOOK OF INSANITY FOR PRACTITIONERS AND STUDENTS. By DR. THEODOR KIRCHHOFF, Physician to the Schleswig Insane Asylum, and Privatdocent at the Kiel University. Illustrated with eleven plates. Pp. 362. New York: William Wood & Co., 1893.

THIS volume, which is one of the "Medical Practitioner's Library" series, is without a preface. It is made up of two parts called general and special parts. The former, comprising 178 pages, treats of the anatomic basis and the location of mental disturbances, and the classification, causes, symptoms, diagnosis, treatment, and history of insanity. The latter part deals with the various special forms of insanity, which are divided into "Simple mental disorders," and "Mental disorders associated with permanent anatomical changes in the brain or with general diseases."

The general part, which is very readable, discusses the whole subject of insanity from a broad and comprehensive standpoint, and would be exceedingly helpful, we believe, to the student or general practitioner attempting to grasp the subject of insanity. It serves as an excellent introduction to the special part.

While a conservative spirit is maintained throughout the work, making it a safe guide, yet the author shows familiarity with the investigations and progress of recent years. His views on mechanical restraint are most sensible. He says: "In rare cases, however, it would be fanatical to dispense with restraint." In places the conservatism is extreme: for example, when he says that all remedies other than the bromids are useless in epilepsy. A number of excellent plates representing typical forms of insanity will be helpful to the student. The publishers' work is very creditable.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 84.)

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

FIRST DAY—JUNE 6TH.

DR. L. A. DUHRING, of Philadelphia, read the President's Address, which was entitled "The Scope of Dermatology." He pointed out the difficulty of separating so-called cutaneous diseases from many general diseases accompanied by cutaneous symptoms.

The term "skin-diseases" can no longer be used in its ancient sense, and these affections cannot be looked upon as morbid entities, as diseases whole and complete in themselves. The tendency of modern dermatology is to use the term to include all of the morbid manifestations that may occur upon the integument.

The objective study of affections of the skin is fascinat-

ing and very important, but it is not comprehensive enough, without invoking the aid of general pathology and considering the relations of the skin to the general economy. Cutaneous diseases must be studied not only as localized areas of superficial disease, but as indexes to disease elsewhere, or as a key to some morbid process that may originate or have its seat in other tissues of the body. The strictly local nature of some diseases is plain, as in the parasitic affections, certain inflammations due to local causes, as rhus poison; but while this holds true for a considerable number of diseases, there are still many that are in reality widespread diseases, the integument being only one of the organs of the body involved in the process, as the so-called exanthemata, other eruptive fevers, the eruptions due to various poisoned states of the system, as in septicemia, glanders, leprosy, and syphilis. Our ideas of the so-called skin-diseases, and the whole subject of dermatology, must be greatly enlarged. This branch of medicine should include all morbid manifestations that appear on the skin, whatever may be their cause, nature, and character. Dermatology has properly to do with the integument and all that pertains to it, and, moreover, with all of the varied causes that may disturb this organ.

The idea of the vast array of cutaneous affections being morbid entities confined to the skin must, in many cases, be abandoned in favor of the principles of general medicine. We should study these diseases with the view of learning all that they can teach us, not only of the skin, but of general pathology. We should look in the majority of cases beyond the mere eruption, valuable and important as this is in all cases as a guide to the pathologic process at work. The cutaneous disturbance in many instances is distinctly indicative of some disorder, irritation, or localized disease in other regions, organs, structures, or fluids of the body.

Dermatology should be for the physician as a key with which the skin is made to reveal, in many instances at least, the nature of the morbid process in the general economy, or in other organs, which without this aid might remain obscure, as in the exanthemata, syphilis, leprosy, and other diseases.

Dr. Ohmann-Dumesnil, of St. Louis, read a paper entitled "Erythema Exfoliativum Recurrens." He referred to six cases of this interesting affection, giving the reasons why the term erythema is used, instead of dermatitis. He believes erythema to be dependent upon an exaggerated circulation, while dermatitis is a true inflammatory process.

In the cases reported there was an infiltration of lymph-cells, with a periodicity of the attacks, such as occurs in hay-fever. The mental condition may have some influence in the production of these attacks.

Dr. Grindon, of St. Louis, pointed out that an erythema often degenerates into a dermatitis. In the cases reported the cutaneous manifestations may have been due to the presence of some irritant in the blood, such as toxalbumins or bacteria.

Dr. Lydston, of Chicago, likewise believed the trouble to be due to a condition of toxemia. The recurrence of the disease is comparable to the recurrence of attacks of epilepsy and of other neuroses.

Dr. Ravogli, of Cincinnati, referred to a case of ichthyosis, in which a layer of epiderm as hard as wood formed upon the fingers, after a time being thrown off like the stalls of a glove, the fingers remaining entirely well until, following the occurrence of neuralgic pains, a new layer would form, to be disposed of in the same way as the former one.

This case, and those reported, were considered as tropho-neuroses, in the mechanism of which the vaso-motor nerves play an important rôle. The erythemata nearly all display a tendency to relapse. It is often difficult to state when an erythema becomes a dermatitis. When, however, exudation and necrosis of the horny layer occur, the process is more profound than a simple hyperemia.

Dr. A. Ravogli, of Cincinnati, read a paper "On the Nature of Eczema," detailing the results of some unfinished experiments. The inoculation of rabbits upon the shaved ear with pure cultures of the staphylococcus pyogenes albus yielded no result. After blistering both ears of rabbits by means of croton oil, one ear was inoculated with the cultures. The uninoculated ear returned to its normal condition in six or seven days, while the other, after a week, began to inflame and to discharge a serous fluid, and subsequently became covered with thick, yellowish crusts, on removal of which excoriations appeared. The symptoms were quite like those of eczema, and continued for more than four weeks.

The conclusion was reached that eczema is not simply a dermatitis, but that dermatitis is the cause of eczema, which is a chronic process, in most cases dependent upon the presence of the staphylococcus beneath the epithelial cells.

Dr. Bulkley objected that all cases of eczema are not chronic in course. The condition may also be acute. In many cases the cause is to be found in the nervous system.

Dr. Duhring admitted the distinction between eczema and dermatitis. Clinically, some cases conform to the type of eczema, while others are instances of ordinary dermatitis. There are still other cases, however, in which the clinical picture is complete. Great difficulty attends an etiologic classification of eczema.

Dr. Ravogli stated that a knowledge of the etiology of disease must lead to the application of remedies with greater certainty of success. He had no doubt that purulent discharges frequently form the starting-point of eczema, and that the affection is thus often contagious. A healthy epidermis constitutes a safeguard against the action of the staphylococci, but when the epidermis is scratched or inflamed the conditions are favorable for the production of eczema. The experiments thus far made have been limited to the staphylococcus albus, but the staphylococcus aureus and citreus will be similarly studied.

Second Day—June 7th.

Dr. L. D. Bulkley, of New York, read a paper entitled "Notes on Feigned Eruptions." He related the case of a girl who had been ill with spinal meningitis, and who presented some twelve red patches of excoriation upon the cheeks, covered by crusts; other patches were scattered on the temples, others on the neck. On the arms were abrasions of the skin, running in the axis of the limbs, with inflammation more severe than on the face. The affection was painful, but its nature was doubtful. The girl was intelligent, but presented a

neurotic history. Careful study of the lesions aroused the suspicion that they were self-produced. The object was found in the desire to go to a certain watering-place. It was learned that the lesions had been produced by rubbing the skin with sand paper.

In another case, in a child of wealthy parents, superficial excoriations were present upon the feet, leg, arm, with some erythematous areas upon the face. Many remedies had been used without avail, until it was found that the eruption was caused by rubbing the skin with the fingers, from which a pleasurable sensation was derived. The sexual sense is sometimes stimulated by rubbing certain portions of the skin.

DR. OHMANN-DUMESNIL referred to the case of a woman who produced sores on her chest by applications of argentic nitrate.

DR. FRANK referred to the case of a boy who, having learned that the taking of antipyrin would be followed by the appearance of an erythematous eruption, would take the drug for the purpose of producing the eruption, in order to be kept from school.

DR. GRINDON said that he has seen children that had cut off the eyebrows and eyelashes to simulate alopecia. He referred to the case of a man of remarkable intelligence who used to burn his arm with a lighted cigar.

DR. LONGFELLOW, of Cincinnati, referred to the case of a dressmaker, who had an acne eruption, and took large doses of potassium iodid for the purpose of maintaining the eruption.

DR. RAVOGLI related the case of a young man who, to escape military service, produced an eruption of large blisters and excoriations by the application of the cortex of timelia. He referred to the practice, in certain parts of Italy, of inoculating tinea favosa from one person to another for the purpose of securing exemption from military duty.

DR. DUHRING stated that he has seen very few cases of feigned eruptions, and most of these in dispensary practice, and not in private. He has also seen eruptions that might have been taken for feigned eruptions, but which were really produced by nature. In the case of one woman, who presented symptoms of hysteria, and had puzzled many physicians, an eruption that was supposed to be artificial, and that resembled pemphigus, was found to be a true neurotic affection of the skin.

Weir Mitchell has also reported the case of a woman who presented a large sore covered with a singular crust, which had been judged to be produced by chemicals, but it was afterward learned that it resulted from other causes.

DR. LONGFELLOW, of Cincinnati, read a paper entitled "The Local Treatment of Psoriasis." For the removal of the scales he recommended a kind of soap containing sulfur and green soap. As an application to the skin, he recommended a mixture of collodion and tar, and also chrysarobin and pyrogallic acid mixed with collodion.

DR. OHMANN-DUMESNIL said that psoriasis of the scalp, especially in women, will not usually submit to the means recommended. He therefore uses oil of cajuput, which he finds very useful and of easy application.

DR. BULKLEY recommended the use, twice a day, of an ointment containing hydrarg. ammoniat., bismuth. subcarb., āā ℥ss; acid. carbolici, gtt x; unguentum ammon. rosat., ℥ij—M. Ft. unguent. The scalp should not be washed too often. Aristol is useful, as is pyrogallic acid, 5 per cent. in collodion, covered with wax paper. Twenty-five per cent. of the cases can be better cured by means of internal and hygienic means than by means of local treatment.

DR. GRINDON read a paper entitled "Recurrent Zoster." He called attention to varieties of vesicular eruption that display a tendency to frequent relapse, but which also resemble zoster, though failing to show all of its characteristics. These varieties he designates zosteroids.

DR. RAVOGLI read a paper entitled "Purpura Recurrens." He referred to two cases, one in a male the other in a female, both of whom presented petechiæ on both legs, with edema and pains in the joints, relapsing every two or three weeks for a long time. There was no fever. No albumin could be detected in the urine, but there was marked anemia, the diminution in the number of red corpuscles being the principal feature. Both cases had been treated with anti-rheumatic remedies without benefit. Under treatment with tincture of ferric chlorid and nux vomica internally, and the application of rubber bandages to the extremities, complete recovery ensued.

The hemorrhagic extravasations were ascribed to diminished plasticity of the blood itself from a deficiency of albumin and the badly nourished condition of the tunics of the bloodvessels.

The edema is to be explained by the diminished resistance of the tissues and the increased intra-vascular pressure, with lymph-stasis. The recurrence is related to the functions of the vasomotor nerves. Anemic individuals are more susceptible to stimuli than others.

DR. FRANK read a paper on the "Treatment of Ulcers of the Leg." He classified ulcers as idiopathic and symptomatic, and referred them to (1) want of circulation, and (2) stasis. The condition occurs most frequently among the poor, who are obliged to engage in hard work.

In treatment, zinc-gelatin was recommended to keep the ulcer from contact with the air, and speedily leading to recovery.

DR. RAVOGLI related that he had found it wise to omit the use of zinc-gelatin in cases of fluid discharge. Some cases are attended with such intense pain that the patient cannot bear the presence of an impermeable dressing. In these cases the application of cold water, in the form of a bath, will diminish the inflammatory symptoms. When the necrotic tissue undergoes sloughing, antiseptics are indicated, followed by the application of adhesive plasters, so as to bring as intimately in contact as possible the edges of the ulcer. When the ulcer has callous edges, which retard recovery, these should be cut off with scissors. At the conclusion of the treatment, when the leg is infiltrated and shows varicose veins, the application of the rubber bandage is essential.

DR. PRICE expressed the view that in most cases a saturated boric dressing is the most appropriate, while in some applications of a watery solution of tannin are the most satisfactory. In callous ulcers scarification through the scar-tissue, and an antiseptic dressing are often successful. Balsam of Peru has good effect in stimulating the granulations; as does also the application of a sheet of lead to the ulcer.

DR. M. B. RICKETTS presented a paper entitled "The Obliteration of Pigmentation on the Human Skin, with Experiments."

DR. BULKLEY read a paper "On the Use of Waxed Paper in Dermatologic Practice." He said that twenty years ago attention was called to the use of waxed paper in certain diseases of the skin. This is not intended to take the place of collodion, but only to be employed when it is desired to exclude the air from the affected surface.

DR. DUHRING announced a formula for tincture of coal-tar, which he has found useful in many affections of the skin, and which may be combined with other substances in the form of an emulsion. Aqua bituminis, tinctura picis, coal-tar dissolved in alcohol, caustic soda, and tincture of elm make a fine mixture.

DR. DUNN presented a paper entitled "A Case of Leprosy in a Native American without Known Infection."

CORRESPONDENCE.

ENLARGED AND DISPLACED SPLEEN.

To the Editor of THE MEDICAL NEWS,

SIR: Your excerpt from the *Annals of Surgery* on the "Operative Removal of an Enlarged and Displaced Spleen," published in THE MEDICAL NEWS of July 8, 1893, induces me to mention a case that came into my hands in 1889, to illustrate our liability to err in the diagnosis of enlargements within the body, and to record the peculiar termination of the case.

In the fall of 1888, while attending a member of the family of M. T., a farmer living in the Missouri River bottom in Clay County, Missouri, a malarious locality, my attention was called to an enlargement in the *right* inguinal region of Mrs. M. T., a woman thirty-two years of age, who had borne five healthy children. The enlargement was at the time apparently about the size of a child's head at birth, rounded, and more or less firm, but not hard. It was not freely movable, though it could be moved somewhat.

Mrs. M. T. was in fairly good health, of spare build, and light complexion. The tumor had existed for about six years, varying in size, being sometimes larger and sometimes smaller. The woman had never suffered much pain. Neither her appearance nor her history indicated chronic malarial infection. I advised her to let the mass alone until such time as it became troublesome and gave her distress, when an operation would be demanded.

I was called to see her again in the spring of 1889. The time for operation had apparently arrived, as in the previous few weeks the tumor had enlarged considerably and had become quite painful. I called upon a prominent surgeon to examine the case with me, and an operation for the removal of the mass was decided upon. While on the table, under ether, a closer examination noted the absence of the spleen from its proper place. A hypodermatic syringe, armed with a long needle, revealed the contents of the tumor to be blood, and the operation was postponed indefinitely. The woman was at that time four months pregnant. She was put upon the old-fashioned tincture of iron, iodin, Fowler's solution, and glycerin mixture, and the enlargement duly decreased and almost disappeared.

In September she was delivered of a healthy child. Nothing noteworthy occurred during the labor or puerperium. Six weeks thereafter, however, I was called in haste on Sunday morning to see the patient, as the tumor had rapidly enlarged and was very painful. I found it occupying its place in the *right* inguinal region. It was about the size of the average adult's head. My efforts to allay the pain were only partially successful. The temperature was normal. There was thirst, which increased up to the time of her death on Monday at noon. The bowels were moved three or four times naturally during Sunday and Sunday night. Vomiting was troublesome all day Sunday, and, by Monday morning, became stercoraceous. The skin assumed an ashy-white color.

I made a post-mortem examination on Tuesday morning, and found the enlargement to be the spleen. Death was caused by the accidental twisting of the elongated pedicle, which was about half the size of my wrist. The spleen had been turned completely around twice, strangulating the splenic vessels and causing rupture of the rounded portion of the organ opposite the attachment of the pedicle. There were three points of rupture: one about five inches in length and half an inch deep, and two shorter ones on either side of the long one and about an inch from it. It is needless to say that the peritoneal cavity was full of blood.

Viewing this case retrospectively, the woman's life might have been saved by replacing the spleen at the time of preparation for operation six months before, but nothing seemed to warrant such a procedure at that time. When last called, untwisting the pedicle, suturing the rents, and cleaning out the peritoneal cavity might have enable her to recover.

Respectfully, H. O. BEESON, M.D.

NOEL, MCDONALD CO., MO.

DIABETES MELLITUS IN A CHILD, WITH RECOVERY.

To the Editor of THE MEDICAL NEWS,

SIR: That a form of diabetes mellitus can exist in a child, from which perfect recovery is possible, I am led to believe from a case coming under observation in April, 1890.

E. J., aged six years, having consumed quite an amount of sugar-water, taffy, "wax," and other saccharine products of the sugar-making season of 1890, was observed by his parents to have quite an increase of frequency in micturition, coupled with great thirst, emaciation, and increasing weakness, though preserving a good appetite. This condition had lasted, to their knowledge, two or three weeks when brought to my notice. The amount of urine excreted amounted to from eight to ten pints. The secretion was of pale-straw color, had a specific gravity of 1040, and responded quickly to every sugar-test that could be made.

Reserving a prognosis in such a case, occurring in a family in every way healthy, and with no other known cause than the ingestion of excessive quantities of the product of the sugar maple, I placed the little fellow on five drops of the fluid extract of ergot every four hours,

prescribing an anti-diabetic diet, and ordered laxatives to overcome the constipation, which had been constant from the beginning.

In a week the specific gravity of the urine was down to 1028, and in two weeks it was normal. The boy made an uninterrupted recovery, and is now a healthy lad, although he at one time had saccharine urine for at least five weeks.

Respectfully,

W. W. PENNELL, M.D.

FREDERICKTOWN, O.

PRECOCIOUS PREGNANCY.

To the Editor of THE MEDICAL NEWS,

DEAR SIR: As an addition to your list of early pregnancies the following may be of interest:

G. T., a well-developed colored girl of this city, after a normal labor, gave birth, April 24, 1893, to a small, but apparently full-term female child. The mother was born, according to the statement of her parents, on June 1, 1879, and was consequently thirteen years, ten months, and twenty-three days old, when her child was born. The little one weighed almost six pounds, and at first did well, but died, after four or five weeks, from lack of proper nourishment and care.

Respectfully,

CHARLES H. PRESTON, M.D.

DAVENPORT, IOWA.

NEWS ITEMS.

New Medical College Buildings in Chicago.—The Laboratory Building for the Chicago Medical College, just completed, is a handsome and commodious structure, one hundred feet square and five stories high. The laboratories are of the most approved character and very commodious. Ample facilities are afforded for advanced laboratory work and original research. The anatomic laboratories have asphalt floors and an abundance of lockers for students' clothing and washing facilities. They are well lighted and well ventilated. An ice machine for cooling the ice-box, in which the anatomic material is kept, is one of the many novelties of construction.

Beside the Laboratory Building there is now rising another structure, which will be complete by September 1st, and is intended to furnish additional lecture-rooms for the college and model accommodations for the South Side Dispensary. The sick will be cared for, and clinical teaching will be given here both mornings and afternoons. Immediately south of these buildings is the site of Wesley Hospital. Its present temporary structure is already outgrown and will soon be replaced by a fine hospital.

Mercy Hospital, which is near by, is now being doubled in capacity, and will hereafter contain four hundred beds. This will place at the disposal of the Chicago Medical College nearly six hundred beds from which to obtain clinical instruction.

The Pan-American Medical Congress Excursion to Rome.—It has been definitely determined that the Pan-American Medical Congress Excursion to the Eleventh International Medical Congress will sail on the S. S. "Werra" from New York, September 9th, the day following the adjournment of the Congress at Washington, and will arrive at Genoa, September 20th, four days before the opening of the Rome meeting.

Round trip steamer tickets may be procurred for $142.50 for inside rooms, and $150.00 and upward for outside rooms. Tickets are good for members of the Congress and their families, and may be used at the option of holders to return on any steamer of the line from Genoa, or on Saturday steamers from Bremen, or Sunday steamers from Southampton, during the months of October, November, and December. Physicians desiring to avail themselves of this exceptionally low rate should at once become members of the Pan-American Medical Congress by sending the registration fee ($10.00) to the Treasurer, Dr. A. M. Owen, Evansville, Ind., and informing the Secretary-General, Dr. Chas. A. L. Reed, Cincinnati, of their intention to join the excursion. The trip includes a stop at the Azores and Gibraltar and a sixty hours' sail along the picturesque coasts of Spain, France, and Italy.

Dr. John B. Hamilton has assumed editorial charge of the *Journal of the American Medical Association.* Dr. J. C. Culbertson has resumed his editorial connection with the *Cincinnati Lancet-Clinic.*

A Boylston Medical Prize for 1893 has been awarded to Dr. Wm. E. Hughes and Dr. W. S. Carter, of Philadelphia, for an essay entitled, "A Clinical and Experimental Study of Uremia."

Naunyn, of Strassburg, has been elected to the chair of Internal Medicine at Vienna, as the successor of Kahler, deceased.

In Memory of J. Marion Sims.—A bronze statue of Dr. J. Marion Sims is soon to be erected in Central Park, New York.

Vidal, the eminent French dermatologist, died recently at the age of sixty-five.

BOOKS AND PAMPHLETS RECEIVED.

The Porro-Cesarean Operation, Tested by a Trial of Sixteen Years, and in Twenty-one Different Countries, under Two Hundred and Twenty-four Operators. By Robert P. Harris, A.M., M.D. Reprinted from the New York Journal of Gynecology and Obstetricts, 1893.

Brain Surgery: Injury Received Five Years Ago, followed Three Years Later by Convulsions and Paralysis; Blood-clot found under the Dura Mater and Removed; Patient Improving. By F. C. Schaefer, M.D. Reprinted from the Chicago Clinical Review, 1893.

Character—the True Test of the Physician. By J. W. Long, M.D. Reprinted from the Maryland Medical Journal, 1892.

Cholera. By E. R. Axtell, M.D. Reprinted from the Denver Medical Times, 1893.

I. The Demands for Sterilization. II. A New Combination Sterilizer for Asepticizing Simultaneously Water, Instruments, and Dressings. By Frank J. Thornbury, M.D. Reprinted from the New York Medical Journal, 1892.

Surgical Dressing, Aseptic and Antiseptic. By Seward W. Williams, Ph.C., F.C.S. Reprinted from the Pharmaceutical Record, 1893.

Responsibility of the National and State Governments for the Protection of the Purity of the Water-supplies. By Benjamin Lee, M.D. Reprinted from the Journal of the American Medical Association, 1892.

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ORIGINAL ARTICLES.

DELIRIUM TREMENS.

BY GEORGE B. TWITCHELL, M.D.,
OF CINCINNATI, OHIO.

"A rigor and delirium from excessive drinking are bad."—*Aphorisms of Hippocrates.*

THE tendency at present is to underrate the importance and gravity of delirium tremens. We are warned against the old-fashioned free use of sedatives: "Feed your patient and he will get well;" "When he is exhausted, he will fall asleep anyway." Such advice is often heard. The descriptions of delirium tremens to be found in the text-books are very meager and they frequently entirely omit many of the important phenomena of the disease. Monographs describe many different forms, and are often confusing. This confusion, and indeed many of the current ideas as to the prognosis and treatment of this disease depend upon a very misleading conception, which is, that "delirium tremens is really only an incident in the history of chronic alcoholism." (Osler.) This is true, but the same might be said of cirrhosis of the liver. Delirium tremens is as much a specific disease as cirrhosis of the liver is; but the breadth of the idea that it is "only an incident" hides this important fact, and consequently many of our conceptions of this dangerous disease are founded on the observation of comparatively mild pathologic conditions. The aim of this paper is to give to delirium tremens its true importance as a disease.

The clinical observations to be used here were made during an eighteen months' service as externe and interne at the Cincinnati City Hospital. A great many cases of all grades of alcoholism are continually received at this institution, and while an effort is made to exclude simple "drunks," the policy of the receiving physician is always to err on the side of safety. So it is that many cases are received that otherwise would not be. It is extremely difficult to estimate the extent of a drunken man's illness. Alcoholism, in all its minor forms, is associated with an hysterical condition that is hard to recognize. A man is rarely so drunk as he pretends to be. When a man is suddenly sobered by some necessity, it is simply this hysterical condition that has disappeared. However, it must be remembered that nothing else so completely disguises other disease as does alcoholism. A very severe injury may be hidden under drunkenness. All the symptoms of pneumonia disappear before a concomitant delirium tremens.

During the eighteen months that I served at the City Hospital, 360 cases of alcoholism were received. Of these, 132 had delirium tremens. Many cases were under my care, or at least where I had opportunities of observing them. Others I did not see, but I obtained my knowledge of them from the clinical records. Every possible precaution was taken to insure accuracy. However, certain errors were hardly to be avoided. Probably the 360 cases of alcoholism contained more than 132 cases of delirium tremens. The cases overlooked were probably abortive cases. The inclusion of these cases (could they have been positively identified) would have reduced the death-rate given. This error is probably not very great, and is perhaps the only one that could have occurred in compiling the statistics.

ETIOLOGY.—Sometimes a man goes directly from drunkenness into delirium tremens, but more frequently the disease makes its appearance as he begins to sober up. Anstie says that the first symptom is a distaste for alcohol. I have not noticed that. The disease often begins one, two, or three days after the individual has ceased drinking. This accounts for the erroneous opinion once held that the disease was due to a withdrawal of the accustomed stimulant. No single drinking bout ever produces delirium tremens. It may cause death by alcoholic poisoning, but not by delirium tremens. It is the chronic drinker who develops this disease, and he may develop it without having ever been drunk. Usually, if not always, there is an exciting cause aside from alcoholism. Näcke lays great stress on this. By all odds the most frequent exciting cause is exposure to inclement weather. How severe this exposure frequently is can only be appreciated by one who has engaged in public practice among the lower and criminal classes. An accident may be the exciting cause. An habitual drinker, drunk or sober, is injured (perhaps a leg has been amputated), and the case goes on well for thirty-six or forty-eight hours, when the patient becomes nervous, sleepless, has hallucinations, and runs into delirium tremens that will be almost certainly fatal. A similar result may follow a simple fracture or any slight injury. Probably the majority of cases of surgical delirium are cases of delirium

tremens. The delirium tremens may come on in the course of a pneumonia. Other acute diseases sometimes act as exciting causes.

SYMPTOMATOLOGY.—In describing the symptomatology of delirium tremens, it has been found convenient to divide its clinical history into three stages. This division must of necessity be somewhat artificial, and it must not be expected that every case will present the stages in a typical form, especially as recovery may take place at any time in the first, second, or third stage, and death in either the second or the third.

Incipient stage. As the disease makes its appearance the subject becomes restless and does not sleep well. If he falls asleep, his sleep is haunted by dreams that soon awaken him. The minute he closes his eyes hallucinations pass before his mental vision. During this stage he is rational and *fully appreciates the character of the disease that is approaching.* He now truly has the "horrors." He may be tremulous, but usually he has only the slight tremor that follows every debauch. This is not nearly so pronounced as the true tremor of delirium tremens. At any moment he may become wildly delirious and, losing the mental control he still has, pass rapidly into the violent stage, becoming dangerous to himself and others. In the incipient stage the patient also exhibits the usual gastric symptoms that follow ordinary alcoholic intoxication.

The incipient stage may last one or two days, to be followed by the violent stage or by gradual recovery. First attacks rarely go beyond this stage. Probably fully half of the cases of delirium tremens that recover do so at this time. At the City Hospital such cases were called *impending delirium tremens.* These are the cases that Näcke calls *abortive delirium tremens.*

Violent stage. The violent stage begins with the true delirium. Sometimes it is ushered in with a violent epileptiform convulsion. Epilepsy in connection with delirium tremens has often been described, and, of course, delirium tremens may occur in an epileptic; but delirium tremens does not cause epilepsy, whatever hereditary alcoholism may have to do with it.

Convulsions were rarely seen at the City Hospital, although occasionally a patient in the violent stage would be received with a history of having had a convulsion. The convulsion may be exactly like that of epilepsy, with the exception, perhaps, of not having the cry. However, it is not epileptic, but should rather be called epileptiform. The patient may recover from a convulsion and be but very slightly delirious. Soon, however, the delirium increases. Krukenberg considers the convulsion "as an initial symptom of the delirium itself." Moeli states that the epileptic attack increases the gravity of the prognosis.

Rapidly, but perhaps by inappreciable degrees, the visions that the sufferer knew did not exist, become realities to him. The patient starts suddenly, turns his head, listens, or looks about him suspiciously. He may still appear rational and deny having hallucinations, probably because he even looks upon his attendants with suspicion. He becomes violent, struggles to free himself from imaginary foes, and perhaps screams at the top of his voice. Hallucinations, illusions, and delusions, often, but not necessarily, of a persecutory nature, crowd upon his mind. Illusions are now much more frequent than hallucinations. These may be of sight, hearing, or smell. Those of sight are most common, and are probably often connected with changes in the retina and optic nerve. A patient will often be seen going through some definite motion, as if at his work. His hands may move as if he were unravelling some endless skein. I have seen a printer go through the motions of setting type. Sleep is almost impossible.

The tremor is very pronounced. It is quite different from the slight tremor of all drinkers, which is easily controlled by the use of whiskey. The true delirium-tremens tremor is much greater; it is increased by an effort to use the muscles. In severe cases, especially when temperature is elevated, the tremor persists even during sleep. It usually begins in the tongue and upper extremities, and finally also affects the legs. It is most marked in the hands.

The patient, on account of the mental condition, feels no pain from the most severe injury. He throws a broken leg about as if it were sound. The symptoms of a pneumonia are completely masked. There is anorexia, but vomiting is very rare. Constipation is the rule. The temperature is variable. There may be very little fever or the temperature may run up to 104°, or higher, without pneumonia or other complication to account for it. The patient often sweats profusely. The urine is scanty, high colored, and usually contains some albumin. At this time the patient may rapidly wear himself out and die. This is usual in cases with severe injuries or pneumonia. The disease may run a comparitively mild course throughout this stage. The great excitement, however, is not of long duration, rarely lasting longer than three or four days; but at the end of this period the exhaustion does not always lead to natural sleep, as many clinicians would have us believe; it often leads to a peculiar typhoid state presently to be described.

After the violent stage is well developed the prognosis becomes grave. Death may take place very rapidly, the entire disease having lasted perhaps but

two days. Pneumonic and surgical cases usually die in this stage; so also do the febrile cases of Magnan. One fatal case (complicated with simple fracture of the tibia) that corresponded to the description of Magnan was observed.

Typhoid stage. The patient gradually passes from the previous condition into this state. But while this stage not infrequently follows a very violent second stage, it more often occurs in cases that from the beginning have had a more quiet delirium, and, indeed, from the start, have had somewhat of a typhoid character, which became more marked as the disease developed. It is the patients that have been drinkers for years, and perhaps have had many mild attacks of delirium tremens, that exhibit this stage most perfectly.

As this stage develops, the delirium becomes quiet. The patient loses his fear of the hallucinations, nor indeed are hallucinations frequent, if they exist at all. Illusions, however, are very frequent early in this stage, and are not usually of a persecutory nature. The patient tugs at his shackles, and thinks he holds the reins of a team of horses. This illusion is very common. Illusions of hearing are frequent.

The typhoid state gradually deepens. The patient is extremely tremulous. He is never awake, and rarely asleep. He is easy to control, but needs constant watching, just as a case of dementia would. He may get up and wander aimlessly about. His speech becomes more and more of a mumble, and finally entirely unintelligible. When sharply told to put out his tongue he protrudes it slowly. He passes urine and feces in bed or anywhere. Albuminuria is usual. The pulse is weak and rapid. There is always some elevation of temperature, although it rarely rises above 102°, until the end. Cheyne-Stokes breathing is occasionally observed. The conjunctivæ are injected, the eyes watery, and the eyelashes frequently glued together. The pupils are normal, or react slowly.

The patient lies with his mouth open, his tongue and lips dry, and his breath extremely fetid. One of the cases observed developed a parotiditis, probably by infection through the ducts from this foul mouth. The patient usually takes sufficient food. The bowels are constipated.

The subject lies in this condition for six or eight weeks, or even longer. He gradually grows weaker. One day his temperarure runs higher than usual, reaches 104° or 105°, or even higher (in one case 108.2°), and he then dies.

A small proportion of cases recover, even at this stage of the disease. The great majority die. This sequel to the violent stage of delirium tremens, for all that it is hardly mentioned in the literature, is by no means rare. At the City Hospital it was often called alcoholic meningitis. Leptomeningitis undoubtedly does occur with alcoholism as an important etiologic factor, but when it occurs it presents more definite signs of meningeal inflammation. Paralysis of the third nerve occurred in one alcoholic case in which undoubted meningitis was proved at the necropsy.

Näcke describes a type of chronic delirium tremens which coresponds to this typhoid stage. He uses the term typhoid in describing it. The *chronic continued delirium tremens* of Rose may be the same. However, many of the chronic forms that have been described seem to be rather cases of true insanity. The descriptions of these forms are often unsatisfactory.

Diagnosis.—Usually the diagnosis presents no difficulties. The conditions to be excluded are: acute alcoholic intoxication, psychoses made prominent by drink, alcoholic insanity, delirium of infectious diseases, and mania.

The diagnosis of the third stage may be difficult if a previous violent stage has not been prominent, or has perhaps not been observed. In making a diagnosis of delirium tremens in the early stages, it is well to remember that it is the rule for a man to have a rational period between an intoxication and the true disease. It is sometimes necessary to watch a case a few days to exclude alcoholic insanity. The tremor has diagnostic importance, but a slight tremor is usual in all forms of alcoholism.

Prognosis.—Statistics show a mortality of from 2 per cent. to 35 per cent. Probably this variation depends, to some extent, upon what is included as delirium tremens by the various observers.

Of the 132 cases, 2 (while in the typhoid state) were removed by friends. The result in these cases is unknown. The total mortality of the 130 cases was 35.4 per cent. Of 12 cases complicated by pneumonia, 10 died. Of 9 cases complicated by surgical injuries, in only one was the injury a dangerous one of itself. The other injuries were simple fractures (usually of the tibia, or above the ankle), crushed toe, fractured lower jaw, and scalp-wound. Only 2 recovered (the scalp-wound and jaw cases); 6 died in the violent stage, and 1 at the end of a long typhoid stage.

Of the 109 uncomplicated cases, 29 died, *i. e.*, 26.6 per cent. Of the 29 deaths, 20 occurred at the end of the typhoid stage, and 9 during the violent stage. Of the 80 recoveries, 33 took place during the incipient stage, or, in other words, were abortive cases; 7 recovered after the typhoid stage, and forty recovered after the violent stage had commenced, and without going into the typhoid stage. Many of these 40 cases were very mild.

Pathology.—The question as to the pathology of this strange disease is not an easy one to answer.

Autopsies, however, make some suggestions. When death occurs after the typhoid stage, the post-mortem examination shows a wet brain—in fact, a very wet brain. There is serum everywhere, in the ventricles and between the membranes. The arachnoid is so water-logged as to appear gelatinous; it may be faintly cloudy, but it is never opaque. The vessels of the pia are dilated. The brain has a wet, glistening appearance, identical with that of the *wet brain of nephritis*. This condition has often been mistaken for leptomeningitis. It is not a meningitis at all. The difference between an inflammation and an edema need not be discussed here.

In the cases that die during the violent stage, the arachnoid has not so much of a gelatinous appearance, as if, perhaps, the edema were not of so long a standing.

The lungs are also edematous, and especially marked in cases dying after the typhoid stage is a condition of hypostatic pneumonia of a high grade. A piece of the lung will sink in water. This condition is sometimes so marked as to lead to its being mistaken for pneumonia, and the sudden high temperature that occurs just before death gives some color to this idea. Microscopic examination reveals the error. Of course, this condition is practically the same on both sides and is limited to the lower lobes. A cut is smoother than a cut through an area of red hepatization. It should not be forgotten, however, that pneumonia may occur.

The kidneys are probably always affected. In the post-mortems held on the cases observed the lesions were frequently quite extensive. Interstitial nephritis, sometimes of a high grade, was always present, while parenchymatous changes were by no means rare. Large white kidneys were never found. Krukenberg describes the kidney-lesions, both macroscopic and microscopic, at length. His valuable article should be consulted on this point.

The heart was of the usual granular-kidney type. Beginning cirrhosis of the liver was occasionally observed.

The old inanition-theory, that delirium tremens is due to the want of an accustomed stimulus, is rarely advanced now. The arguments that have been urged against it seem conclusive. However, this does not exclude the idea that delirium tremens is a form of cerebral asthenia. By cerebral asthenia may be understood a condition of insufficient nutrition, not that the food needed is alcohol, but rather that the alcohol has interfered with the nutritive processes to an extent making proper nutrition difficult, while perhaps the last intoxication has for a time shut off the nutrition almost entirely. Associated with this view of the pathology is the idea, very commonly held by both physicians and laymen, that delirium tremens does not develop except in men that do not eat while drinking. It seems to me that this idea is founded on insufficient observation and is not entirely correct. The absence of food from the stomach makes the absorption of alcohol more rapid, but surely the deleterious effects of alcohol can and do occur in drinkers who eat. Of course constant drinking interferes greatly with digestion and nutrition.

Undoubtedly the symptoms of delirium tremens do present certain slight analogies with those of nerve-exhaustion, neurasthenia, especially perhaps in the way of the insomnia and the frightful dreams. It seems, improbable, however, that a neurasthenic condition could be carried far enough to produce all of the phenomena of this disease. In cerebral anemia we never find conditions analogous to delirium tremens, unless indeed, accepting the theory of Traube, we consider the symptoms of uremia as symptoms of cerebral anemia and edema.

The toxemic theory, *i.e.*, that delirium tremens is due to a toxic action of the alcohol imbibed (unless a very wide construction be put upon it), fails to explain the phenomena of the disease. No amount of alcohol will produce delirium tremens in a healthy man or animal not accustomed to drink. The symptoms of alcoholic poisoning are entirely different. It is hard to think of alcohol as a cumulative poison. And if alcohol should accumulate in the system, why would its effects differ from those of acute alcoholic poisoning, and why would two months, or even longer, be required to eliminate the poison?

More plausible is the idea that the disease is due to actual changes in nerve-tissues, the results of the repeated insults of the alcohol; that it is similar to alcoholic neuritis. This theory and the one allied to it, that delirium tremens is a form of insanity, is very often suggested. Delirium tremens and alcoholic insanity are far from identical clinically. Changes in the cerebral cortical cells have been described in delirium tremens, but they do not appear to be constant nor indeed frequent.

The symptomatology of delirium tremens strongly suggests that its phenomena are due to retained products of metabolism, poisons that may or may not be eliminated, rather than to chronic organic changes in nerve-tissue. Apparently the kidneys are constantly crippled.

On account of the large amount of kidney-parenchyma in excess of what is ordinarily needed, it is very difficult to draw inferences from the appearance of a kidney as to its efficiency. However, the constant presence of these lesions cannot but exercise some influence on the symptomatology, if, indeed, they do not cause all of the phenomena of the disease.

Fürstner found albuminuria in 40 per cent. of all cases examined. He also reports three cases in

which delirium tremens developed in well-marked cases of chronic nephritis. In these cases there was an enormous increase of albumin in the urine, and casts were also found. He attributes the albuminuria to a transitory hyperemia brought on by alcohol. These observations are very suggestive, as are also the similarities between the symptoms of poisoning in chronic nephritis and the symptoms of delirium tremens.

The eclampsiàs of the two diseases are identical. Delirium is a prominent symptom of uremia. Delusions of persecution are common in *folie Brightique*. It has been suggested that many of the hallucinations of delirium tremens are in reality illusions founded on alterations in the retina. These alterations may be of uremic origin. The tremor seems a specific symptom of delirium tremens. Muscular symptoms, however, not very different, also occur in chronic nephritis.

Osler, in speaking of uremia, says: "In some of these cases a condition of torpor persists for weeks, and even months. The tongue is usually furred, and the breath very foul and heavy." In the records of the Cincinnati City Hospital are to be found accounts of cases which entered in a condition of torpor, and finally died. The diagnosis made, chronic nephritis, was fully substantiated by the post-mortem examination. Yet these cases in every particular, both of symptomatology and of pathologic anatomy, were identical with the condition that over and over again was seen to proceed by inappreciable degrees from a typical delirium tremens.

Death from delirium tremens usually occurs at perhaps a little earlier age than does death in ordinary cases of granular nephritis. The first attacks of delirium tremens, which may occur early in life, are not fatal, being usually abortive cases. This may be because the kidney-lesions are not far advanced. Moreover, it is possible that elimination by organs other than the kidneys is also imperfect.

Many cases of uremia, and the other accidents of nephritis, such as edema of the brain and lungs, come on suddenly after a debauch or unusual exposure, and it is not impossible that the symptoms of delirium tremens may be of a similar nature, brought on by the extra work that the last debauch, with concomitant exposure, or injury, or pneumonia, throws on a pair of already crippled kidneys. It is well known how a chronic nephritis influences the prognosis of a pneumonia or an injury.

Uremia, as we ordinarily see it, and delirium tremens are not identical clinically; and for all that, in certain cases it is extremely difficult to differentiate between the two; yet, usually, does delirium tremens present a specific clinical picture. This is an argument against the theory that has been here suggested. Another point is that while the severe uremic symptoms of interstitial nephritis are usually associated with a great increase of albumin in the urine, all cases of delirium tremens do not have albuminuria.

So, for all the arguments in favor of the theory that has been here suggested, it cannot be said with any degree of certainty that it is the correct one. Further investigation must settle this. But whatever finally proves to be the true explanation of the phenomena of this disease, I believe it will be found that delirium tremens does not, and cannot occur in subjects with healthy kidneys.

Treatment.—The frequent, if not invariable, presence of kidney-lesions, whether these lesions do or do not constitute the essential pathology of the disease, should not be forgotten. It is wise to begin treatment with a purgative, and to keep the bowels freely open throughout the disease. Practice shows the value of this. Diuretics, especially digitalis, have been used, and highly praised. Probably hot-air baths and similar procedures would be of great value, especially in the typhoid stage. I have never seen them used. Such means should be used with the idea of eliminating the toxic principles, whatever they may be.

But there are a number of other indications to be met, and in meeting them we are possibly employing physiologic antidotes, for surely certain drugs seem actually curative. By the proper use of sedatives we can prevent the nervous system from becoming overwhelmed, until time enough has passed for the toxins to be eliminated. And, indeed, it seems that violent nervous disturbances are of themselves injurious and dangerous, aside from exhausting the patient, increasing, perhaps, the very products of metabolism of which we are anxious to get rid. It is not considered safe to allow the convulsions of puerperal eclampsia to go unchecked. Yet no one would claim that the drugs used in checking them remove their cause; but the common opinion is that these drugs are to some extent curative. Surely morphin is so considered by many.

A great many cases of delirium tremens will get well without treatment. These are usually abortive cases. First attacks almost always recover unless associated with pneumonia or injury. A careful attention to the digestive system will hasten recovery. Capsicum, or some similar drug, aids greatly in overcoming a nervousness (present after every alcoholic intoxication) that seems associated with the disturbed stomach.

In the severer cases the stomach-symptoms are not nearly so prominent. Vomiting never interferes with medication. Little can be done for the anorexia.

. It is often impossible to tell whether a case in the incipient stage will stop or go on to more dangerous conditions. A radical treatment at this time is easier, safer, and more successful than later. Put the patient to sleep before the severe delirium comes on; it is easy now; it may be very difficult later. The earlier that chloral or other hypnotic is used, the easier can its results be obtained. Exhaustion does not assist the drug until the typhoid stage is reached, when the sleep obtained is not natural but a sort of semi-coma, and the time for benefit from the drug has passed; or, too often, the typhoid stage is never reached, and the exhaustion that we had hoped would aid us leads to a coma that rapidly ends in death.

The medical treatment in vogue at the City Hospital, when I was interne, was potass. brom., gr. xxx; chloral, gr. xx, every three hours—sometimes a little more and sometimes a little less. Very little else was used in the violent stage until the heart began to fail, when, of course, stimulants were administered. The results were not good. Bromids are absolutely worthless in such a disease. At the best their sedative action is a very mild one. Chloral was usually given in altogether insufficient doses. If the chloral or other drug does not make the patient sleep, it does no good and probably does harm.

In a few cases chloral was given in sufficient doses to produce sleep; 30, 45, or 60 grains, varying with the case, were given from every half hour to three-quarters of an hour, until the patient was asleep, and then if he was delirious on waking he got another dose, 30 grains being usually sufficient at this time. The cases so treated did remarkably well. When the treatment was commenced early, but small doses were required. One dose was often sufficient; more than three were never required. The patient often slept eight or ten hours without waking, and on waking was rational. Some of the cases so treated were very severe, one being complicated with a fractured jaw; yet all recovered. Of course, the unusually good results obtained were, in a measure, accidental. This treatment was not sufficiently used at the City Hospital to be very good evidence in favor of such dosage. In all, ten cases were so treated. But while this number is very small, it must be remembered that the results obtained by this treatment in former times were good. One great advantage this method has over repeated small doses is that the patient is not so often disturbed. It is often very difficult to persuade a violent delirium-tremens patient to take medicine after the first two or three doses. Hypodermatic medication alarms the patient too much.

In pneumonia the tendency to heart-failure is so great that perhaps chloral would be dangerous. However, recoveries under any treatment are rare. Perhaps it is especially in surgical cases that this treatment is most valuable. In these cases the first intimation of delirium should be met by sufficient chloral.

Unfortunately many cases will die, no matter what treatment is used. It is astonishing how rapidly some of these cases, especially surgical ones, grow worse in spite of all efforts of physician or surgeon.

Shackles are a necessary evil. In the violent stage they are often indispensable, the milder substitutes, such as tying a sheet over the patient and to the bed, being altogether insufficient. In the later stages it is bad practice to use them, as they tend to keep the patient in one position and increase a tendency to hypostatic pneumonia.

A number of drugs were tried in the typhoid stage. Ergot had no effect. It was used with a mistaken idea as to the pathology. Digitalis seemed of some value, but did not accomplish much. Whiskey was used without very satisfactory results, a much better heart-stimulant being found in strychnin. Some clinicians use whiskey quite freely throughout the disease. I am inclined to doubt the propriety of this. Strychnin is a most valuable drug in the typhoid stage, and indeed in every stage of the disease. It should be used very freely.

Patients in the typhoid stage should not be kept in one position. Possibly something might be accomplished in some cases by getting the patients out of bed occasionally. This, of course, should be done carefully.

The constant watching required through the many weeks that these cases often last is very exhausting to both physician and attendants, and is too liable to result in carelessness. Perhaps the greatest difficulty in treating delirium tremens is to persuade the attendants that the patients are really human beings, suffering from a disease.

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THE DIAGNOSIS AND PROGNOSIS OF ALBUMINURIA, INDEPENDENT OF NEPHRITIS.[1]

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VON HELMONT, a follower of the celebrated Paracelsus, and one of the founders of the Iart-Chemical School of Medicine, in the seventeenth century, thought that the cause of dropsy was *some* fault with the action of the kidneys.

Cotunnius, or Cotugno, in 1770, was aware that the urine, in cases of dropsy, would coagulate upon the application of heat. Following Cotunnius, Blackall, of Exeter, England, made a study of albuminuria, but owing to his comparatively limited facilities for post-mortem examinations, he failed to discover the true seat of the disease and expressed the opinion that it was "due to the elimination of the dropsical fluid by the urinary passages." The opinion thus expressed by Blackall may be regarded as the last expiring gasp of the old "humoral pathology" which, with more or less prominence, had cropped out in the philosophic speculations of most of the *schools* or *systems* of medicine with which the world has been blessed (or otherwise) since the days of Hippocrates.

The great Scotch pathologist, John Hunter (1728–1793) struck at the foundation of these speculations when he deductively assumed that disease is seated in the solids of the body rather than in the fluids. But humoral pathology received its death-blow when Bichat, the "father of general anatomy," by his indefatigable industry, opened a new era in medical science by directing the attention of students to the *tissues* of the body, thereby laying the foundation for the sciences of histology and pathologic anatomy. The labors of Bichat were brought to an untimely close in 1802, but the impulse that he gave to the prosecution of researches in morbid anatomy is still felt.

Richard Bright, pathologist to Guy's Hospital, following the line of study pursued by Bichat, and availing himself of the abundant opportunities for post-mortem examinations at his disposal, forever overthrew the humoral views then vaguely and dimly entertained as to the pathology of albuminuria and dropsy. Bright, although he did not fully elucidate the morbid anatomy of nephritis as we are now acquainted with it, for the first time ascribed the symptoms to physical changes in the structure of the kidneys, and hence there is propriety in associating his name with the disease.

Since the publication of the *Reports of Medical Cases*, in 1827, the names of Rayher, Johnson, Virchow, Rosenstein, Stewart, Gull and Sutton, Tyson, Da Costa, Ralfe, Dickinson, Dukes, and many others have become familiar in the literature of the subject. But although a great mass of information has been the result of the labors of these men, there are still many unsettled questions bearing upon the subject, which time alone can solve. Among these there are none more important than those indicated by the title of this paper. The vast majority of cases of so-called functional albuminuria, or, as I prefer to call them, "albuminuria in the apparently healthy," are discovered when the individual presents himself for examination as a candidate for life-insurance.

We have here, then, to decide whether, in the particular case, the albuminuria is due to a grave organic disease of the kidneys or to a condition dependent upon some slight and transient cause, from which the applicant may recover in a short time. This is a question of paramount importance, from whatever point of view we regard it, but it is one that cannot be satisfactorily answered at the first examination, and probably not at the second or even third.

As regards the urine itself, the main points to be determined are the significance of: First, the amount and persistence of albumin; second, tube-casts; third, specific gravity of the daily urine; fourth, the excretion of urea.

1. *The amount and persistence of albumin.* We can gain comparatively little information as to the nature of the case from a study of this question, for in that gravest of kidney-affections, granular degeneration, the albumin may be very small in amount and may occasionally be entirely absent. Mahomed and others have shown that this disease may even make considerable progress before albumin appears in the urine at all. Bartels,[1] of Kiel, refers to a case of granular degeneration of the kindeys which was under his care for a considerable time and until its fatal termination, in which no albumin was found in the urine at any time. Brannan[2] records a case in which an applicant for life-insurance was found to have albumin in his urine on one examination out of eight, spread over six months. Some months later the man committed suicide, and an autopsy showed commencing nephritis, as well as marked degeneration of the vascular system.

Some writers have thought that the albumin, in cases independent of nephritis, would not be present in a higher amount than $\frac{1}{25}$ or $\frac{1}{20}$ per cent.,

[1] Read before the Wisconsin State Medical Society, May 3, 1893.

but a prominent physician of this city has stated that, while a medical student in college some six or seven years ago, his urine contained a large amount of albumin for some months, the coagulum, on boiling, equalling about one-quarter the bulk of the urine boiled. His urine has now been normal for years.

2. *The significance of tube-casts.* When it was first recognized some years ago that albuminuria did not constitute nephritis, it was thought that when tube-casts were found in the sediment of an albuminous urine, this settled the diagnosis. This view has long since been given up. Da Costa, in his work on *Diagnosis*, speaks of a case in which tube-casts of the hyaline and waxy varieties were found, and in which recovery took place and no indications of nephritis subsequently appeared.

Johnson, Edes, Janeway, Saundby, and others[8] have, from their own experience, arrived at the opinion that "hyaline and epithelial casts are often present in the albuminous urine of patients whose speedy recovery may be confidently predicted." On the other hand, cases of well-developed nephritis may fail, on many examinations, to exhibit any tube-casts.

3. *Specific gravity of the daily urine.* This is regarded by some as one of the most valuable diagnostic indications we have, for the structural changes in the kidneys in chronic nephritis are such that, as Saundby has found, in 70 per cent. of cases the amount of urine is increased, the specific gravity being correspondingly low. Hence, other things being equal, a specific gravity of 1020, or above, of the total daily urine would strengthen the opinion that no grave kidney-disease existed. Da Costa[23] lays special stress on the importance of the specific gravity in the matter of diagnosis, stating that he has yet to see an instance of persistent low specific gravity in albuminuria associated with oxaluria and uric acid, and independent of nephritis.

4. *Excretion of urea.* Dr. C. S. Bond,[4] in a very interesting paper, has brought forward some striking facts to justify his opinion that a diminished average daily excretion of urea is one of the earliest indications pointing to chronic nephritis. Observations have been made by others as to this point, but they are not entirely in accord with those of Dr. Bond, and there are many cases in which the daily amount of urea is normal, or above normal, in which nephritis has been for some time established. Although I have done some work in this line myself, the facts elicited are not of sufficient number to be of any value as data upon which to hazard an opinion.

It, therefore, becomes apparent that we cannot base a diagnosis upon an examination of the urine alone, but must take a much wider view of the case. Before we can conclude that we have to deal with a case of albuminuria independent of nephritis, we must determine the absence of those subjective symptoms which usually accompany that disease, such as gastro-intestinal disorders, neuralgia, rheumatism, and cephalalgia. Saundby found that the pulse-rate in contracting kidney is usually high, ranging from 90 to 100 per minute, though in some cases it may be normal, and that the arterial tension is increased in about 50 per cent. of cases. As cardiac changes, as hypertrophy, appear in a certain proportion of these cases, it becomes necessary in reaching a diagnosis to have reference to the condition of the heart.

Give, then, a case of albuminuria: If upon investigation we find that, though the albumin is present in every specimen of urine examined, it is only in small amount; that the daily quantity of urine is normal, and of normal specific gravity; that the amount of urea excreted is normal; that the pulse is below 80 in frequency, and the heart is normal in size and sounds; that tube-casts are not found, or only occasionally found, in the urinary sediment; that no hereditary predisposition to kidney-disease can be established; that there are neither gouty nor rheumatic tendencies; that the functions of the skin and alimentary canal are active and efficient, it may fairly be concluded that we have to deal with a case in which the diagnosis of albuminuria, independent of nephritis, may be made. And this diagnosis may be adhered to, even if hyaline tube-casts are occasionally detected in the urinary sediment, particularly if the patient is below forty years of age, and crystals of calcium oxalate or uric acid are coincidentally discovered; it being easily conceivable that these substances may initiate such a condition of the uriniferous tubules as to give rise to casts, and which condition may be but transitory, the tubules returning promptly to a normal state.

But just as a cough which may be present in a given case for a more or less protracted period, independently of pulmonary tuberculosis, requires careful treatment, so do these cases of albuminuria, independent of nephritis, and the one case can no more be regarded as physiologic than the other.

Second only in importance to diagnosis is the question of prognosis, and this has reference not only to the immediate future of the case, but also to the remote future—that is the question as to the prospects of recovery from the immediate condition under consideration, and whether there is a greater tendency on the part of individuals thus affected to develop later in life the graver forms of kidney-disease.

On a superficial view we should be inclined to think that the prognosis for the immediate future

would be good, especially in cases in which the albuminuria is more or less intermittent in character, and less favorable when the albuminuria is persistent; and that as to the remote future, we might reasonably expect that among persons whose kidneys had exhibited impaired function on various occasions, and for different periods of time, there would develop an exceptionally large proportion of cases of chronic kidney-disease of a fatal character.

As to the first part of the question, we may perhaps assume to be in a position to speak with a tolerable approximation to definiteness. When albuminuria has been definitely shown to result from diet, muscular exertion, or exposure to cold, the prognosis is decidedly good for the present; and in the so-called simple persistent albuminuria the immediate prognosis is good; but should the case continue for a protracted period, the fear must ever be present that it will eventuate in the development of grave organic changes in the kidneys.

Grainger Stewart[6] says that his observations have led him to conclude that this is not a very frequent termination, but still it is one that is always to be feared, and that a careful watch should be maintained for indications pointing in that direction. Purdy[6] is distinctly of the opinion that persistent albuminuria depends on a pathologic condition of the kidneys, and is therefore of no light import. Roberts[7] expresses a rather decidedly favorable prognosis, but quotes Dr. G. Johnson and Dr. Dukes as being inclined to think that the condition may eventuate in nephritis.

Dr. G. Johnson[8] believes that the long-continued percolation of albumin through the walls of the Malpighian capillaries may result in decided pathologic changes to such an extent that albumin permanently escapes with the urine, "and in consequence of the long-continued filtration of albumin amongst the gland cells of the convoluted tubes, these structures may by degrees become so disorganized as to be incapable of discharging their excretory function." He further says[9] that these so-called functional albuminurias are often the prelude to a permanent and dangerous affection, and that proper hygienic care and watchfulness, together with attention to diet, are called for in order to postpone the grave form of disease.

Rabagliati[10] says that he is entirely out of sympathy with those who are disposed to take a favorable view of cases in which even a trace of albumin is present. Dukes[11] takes a distinctly unfavorable view of the prognosis when the albuminuria has persisted for any length of time. He says: "If the hyperemia be prolonged, however slight in degree, the albuminuria gradually becomes persistent, owing to the permanent dilatation of the bloodvessels, and tends to the destruction of the kidneys." Dr. J. W. Brannan[12] expresses his belief that all the forms and varieties of the so-called functional albuminurias will, unless arrested, ultimate in structural changes in the kidneys. Dr. Lewis,[13] of Hartford, Conn., from a study of vital statistics and the records of life-insurance examinations, infers that from 30 to 40 per cent. of cases of albuminuria terminate fatally. Dr. W. B. Davis, in a valuable contribution to this subject, read before "The Association of Life-Insurance Medical Directors," at its meeting in New York in 1891, refers to the records of the rejections by a certain, not specified, insurance company, on account of the condition under consideration for the years 1877, '78, '79, and January, 1880. The total number of rejections was 137, and of that number 57 had died by 1891; 11 per cent. died of nephritis and about 6 per cent. of heart-disease. Dr. Drysdale,[18] of London, regards the presence of albumin in the urine as a danger-signal, and has expressed the opinion that the man who had habitually or intermittently albuminuria, should make his will, if he had any property, and be prepared for any sudden illness; which, however, he thought might be avoided by a judicious diet and regimen. Dr. Sturgis,[20] in summing up his conclusions as to the value of albuminuria as a means of diagnosis, says that when present, no matter if it be in small quantity, it is always a danger-signal, and, when persistent, indicates some serious organic lesion somewhere. Dr. R. T. Edes[21] refers to Munn's observations, which go to show that many cases of albuminuria, when followed out carefully, are found to develop nephritis. Four of his sixty-nine cases died of this disease in three years.

On the other hand, there are recorded the opinions of such men as Saundby, Klemperer, and Senator, quoted by W. B. Davis in a paper read before the American Medical Association in 1890, to the effect that albuminuria is a source of no danger to life and does not become transformed into serious disease of the kidney. Keating[14] likens this condition to that of an ordinary "cold in the head," and says it has the same consequences. Maguire[15] divides albuminurias into two classes, those with high-tension pulse and those with pulse of low tension, and expresses the opinion that some of the latter might occasionally be accepted for life-insurance. Dr. Pye-Smith[16] believes all these so-called functional forms of albuminuria to be pathologic. He compares albuminuria with hemoptysis, which, though always serious, does not necessarily indicate grave organic disease, and is disposed to take a favorable view of the prognosis if nephritis is not actually established. Saundby[17] thinks cases called by Pavy cyclical albuminuria are insurable lives, and that there may be other forms of these cases at present badly defined which are equally insurable.

Dr. George Harley,[19] of London, does not consider the presence of albumin, whether temporary or permanent, as dangerous *per se*, but regards the prognosis in cases in which the specific gravity is not below 1.015 as good. Dr. Hingston Fox[22] thinks that, when a small trace of albumin is unexplained and all other elements in the life are perfectly sound, such cases are eligible for life-insurance, and that even when it can be shown that the albuminuria is toxic, or due to strain or shock, the cases might be accepted, rating up such lives a few years.

My own experience and observations of this affection, though not extensive enough to warrant any sweeping generalizations, are nevertheless offered for what they are worth, and tend to confirm the opinion tentatively advanced in an earlier portion of this paper, namely: that we might reasonably expect that, among persons whose kidneys had exhibited impaired function on various occasions and for different periods of time, there would develop an exceptionally large proportion of cases of chronic kidney-disease of a fatal character.

Between April, 1886, and January, 1893, in the course of examinations for life-insurance, I have encountered 39 cases of albuminuria. In these the average age was 36 years. According to the American Experience Tables the rate of mortality at the age of 36 years is 9.09 per 1000 per annum. Of my 39 cases of albuminuria, 4 have died, 3 of nephritis and the fourth of pulmonary tuberculosis. This is at the rate of 17.54 per 1000 per annum. This mortality-rate bids fair to be increased in the immediate future, for 4 more of these applicants have for some time been showing evidences of impaired health, one of them being in a decidedly bad state of health at present, having recently suffered a stroke of apoplexy.

It will be observed that the mortality among my cases of albuminuria has been nearly twice as great as the normal mortality.

I think, then, it is fairly safe to conclude that there is no such thing as functional albuminuria; that in every case it is just as much an abnormal condition as a nasal catarrh or as hemoptysis and should receive treatment accordingly; that while, in the individual case, we may feel justified in indulging the hope of ultimate recovery, we must not regard the condition as of such trifling import as to be passed lightly over, and must admit the fact, which seems fairly well established, that, other things being equal, the prospect of longevity is not as good for the albuminuric as for the individual who does not show this condition.

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805 GRAND AVENUE.

QUININE-BLINDNESS.[1]

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ON October 10th, a man, led by his wife, entered my office with the uncertain step of a blind person. As I tried his vision, I found to my astonishment that he had nearly normal sight. The examination of the field of vision solved the puzzle. In both eyes the field of vision was contracted to five degrees; it can be easily understood that an eye with such a small field of vision cannot see the way very well.

The patient, forty years of age, was in a flabby and relaxed condition. The physical examination of the viscera was negative; the urine was free from sugar and albumin. Both eyes, viewed externally, appeared normal. The pupils, in moderate light, were 2.5 mm. in diameter, motionless to light, but slightly acting in accommodation. Central vision: R. E. = 6/6; L. E., 6/9. The man read with plus 5 D., 15/25 and 60/130, but saw only one small word at a time. The field of vision was contracted to five degrees. The ophthalmoscopic examination revealed the optic discs pale, the borders not sharply defined, the bloodvessels about one-third the normal size, and some were bordered by white lines.

As we know by experiments and practice that strychnine heightens the susceptibility of the senses and widens the field of vision even in a normal eye, I made hypodermatic injections of this drug, one-sixtieth grain, and increasing the dose to one-sixth, injecting altogether two and three-quarters grains in twenty-six doses. I also applied the constant current, three milliampères, the anode over the eye, the kathode on the neck, for fifteen minutes daily.

On November 13th—that is, one month after the beginning of the treatment and nearly two and a

[1] Read before the California Academy of Medicine.

half months after the onset of the affection—the field of vision for white was nearly normal, but the field for colors—blue, red, and green—was still contracted to three degrees. On November 23d the latter was increased to one-half of the normal size

As the patient had been a periodic drinker before, I examined with special care for a central scotoma for red and green, which characterizes alcohol-amblyopia and tobacco-amblyopia, but none was to be found.

The last examination, January 30th—that is, about five months after the attack—showed hardly any changes. The field of vision for white was still nearer the normal; the optic disc was more sharply defined.

The previous history of the case is as follows: The patient, a barber, for many years a periodic drinker, had never had malaria, nor had he ever taken quinine before. On the 30th of August, 1892, he fell sick, and called in the physician who was kind enough to send me these data. The patient suffered from a severe attack of malaria, with a temperature at 106° and a very small, quick, jerky pulse. Ten three-grain doses of phenacetin brought the temperature down to 100°. The man was then given ten quinine powders, five grains each, to be taken every three or four hours. After taking three powders the patient complained of deafness, but continued until he took three more doses—that is, in all thirty grains in twenty-four hours. The next morning he awoke totally blind. After he had taken four more of the powders the physician put him on Fowler's solution, with benefit to his general health.

Before speaking of the literature of quinine-poisoning, I would like to relate some experiments made for the purpose of studying the influence of small doses taken for a long time. Dr. Schulz,[1] of the University of Greifswald, gave to ten healthy students from one-twelfth grain to one-third grain of quinine daily for nine days, doubling this dose in the following two weeks. These small doses caused some slight affection of the brain, produced neuralgia of the fifth nerve, irritated the digestive organs, increased the quantity of urine; but they showed the greatest influence upon the circulation in accelerating the action of the heart. The tonus of the bloodvessels themselves appeared diminished, as the puffed-up face and congested conjunctiva proved. It appears that acceleration of the heart-action as well as the tonus of the vessels were varied. Even these small doses showed an effect on the ear and eye; signs of hyperemia followed, with buzzing in the ears, conjunctivitis, and "flickering" before the eyes.

Barabaschen,[2] of the University of Charkow, made experiments with larger doses, beginning with 0.3 and 0.6 grm. of quinine hydrochlorate. This dose had not much effect; in some it produced symptoms of intoxication, acute gastritis, anemia of the brain, pallor of the face and the mucous membranes, dizziness, sometimes to fainting; drowsiness, ringing in the ears, contraction of the retinal vessels, pallor of the optic discs, concentric contraction of the field of vision, deficiency in sight up to temporal amblyopia. Besides this he noticed (1) a marked improvement of vision lasting a few hours; (2) narrowing of the pupil lasting only a short while, and passing into dilatation; (3) acceleration of the pulse followed by retardation; (4) heightening of the sensibility of the skin, which after a short while gave place to diminished sensibility; (5) a small rise of the temperature, followed by the usual fall. In one case he observed blindness of half a minute, returning ten times at intervals of from five to ten minutes. Between the attacks the sight was normal.

Rogers[3] asserts that after the ingestion of twenty grains of cinchonine sulphate the following phenomena may be pretty constantly observed: In about one hour there will be found cardiac weakness and irregularity, and much debility with tremor. Paresis of visual accommodation progresses to such an extent as to be almost complete, in many instances at the end of the second hour; at this stage even the emmetropic eye will require the aid of a 10 D. convex glass to properly distinguish objects at the normal near-point. This paresis, he says, lasts eight or ten hours. Probably the great majority of cases of amblyopia escape observation and record.

The first case of quinine-amblyopia was reported in 1841 by Guacomini. Dr. I. E. Atkinson,[3] of the University of Maryland, in a paper read at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889, very conscientiously and ably collected from the literature of the subject forty-eight cases of quinine-blindness and added one of his own observation. Since that publication I have found five other cases reported by Mellinger,[4] Herbert,[5] Garafolo,[6] Barabaschen,[2] and De Schweinitz.[3] Besides these there are about ten cases mentioned in the literature, without particulars. It would take too much time to go into details about all these cases, interesting as they are. I will therefore give only a short summary of them.

The blindness in these cases was mostly absolute; in some there was only amblyopia of varying degrees. The blindness generally sets in suddenly, "as though you had turned out the gas;" in many cases, however, vision fails gradually, so that it takes a few days before blindness is total. The duration of total blindness, the absence of all perception of light, varies within wide limits—from a few hours or a day or more to several weeks. In one case (Dewey) it lasted three months. In all cases sight was restored, though slowly, and nearly always imperfectly. Central vision returns first; the color-sense is restored later. In some cases the diminution of

the sense of light is permanent. The field of vision, which is extremely contracted, enlarges slowly and probably does not wholly regain its normal extent.

As variations which have been observed, I may add: anesthesia of the cornea, observed by Dr. Voorhies;[3] convergent strabismus, and nystagmus. Passing to the objective symptoms, we find in quinine blindness the pupil dilated and unresponsive to light. In my case, in which I found nearly normal central vision, the pupils did not respond to light, but to accommodative efforts. The opthalmoscopic examination revealed pallor of the optic discs and extreme diminution of the retinal vessels. In Voorhies' case there was no trace of the optic-nerve vessels; nor did they reappear, in the right eye at least, though the patient could read fine print. The bloodvessels generally remain smaller than normal; the color of the disc does not become normal, but often turns quite white. Dickinson[3] noted marked congestion of the retinal and choroidal vessels, together with a remarkable condition of the optic disc, which appeared swollen and pushed forward prominently into the vitreous. The appearance was very similar to that of the condition denominated "Stauungs-papille" choked disc, the usual concomitant or resultant of "neuro-retinitis." This is a striking variation from the otherwise universal experience, and it may not be impossible that the symptoms in this case were expressions of malarial intoxication such as are occasionally observed. In cases examined early with the opthalmoscope a whitish haze, with cherry-colored spots, has been observed at the macula, as in cases of embolism.

The pathogenesis of quinine-amaurosis has been elucidated by recent experiments on dogs by De Schweinitz,[7] of Philadelphia.

A brief summary of these researches shows that: "Quinine, given hypodermatically to dogs in quantities varying from one grain to four grains to the pound, produces blindness in from three to fourteen hours, the earliest appearance of the blindness after the injection being three hours. The ophthalmoscopic picture in these animals was, in all instances, similar to that which has been noted in human beings suffering from quinine amaurosis.

"The microscopical examination revealed thickening and changes in the walls of the central vessel (endo-vasculitis), organization of a clot, the result of thrombosis, an organization which has been carried on even to the extent of its being channelled by new vessels; widening of the infundibulum of the vessels as the result of the constriction of the surrounding nerve-fibers, presenting appearances not unlike a glaucomatous excavation; and, finally, practically complete atrophy of the visual path, including the optic nerves, optic chiasm, and optic tracts, as far as they could be traced. It seems, then, very likely that the original effect of quinine is upon the vasomotor centers, producing constriction of the vessels; that finally changes in the vessels themselves are set up, owing, perhaps, to an endo-vasculitis; that thrombosis may occur, and that the result of all these is an extensive atrophy of the visual tract."

Buller[3] found, by experiments on rabbits, that a galvanic current, applied to the optic nerve of a rabbit, speedily induces a blanching of the retina and nerve similar to that which occurs in quinine-blindness. By some accident he once produced the same picture in the human eye; therefore he thinks that the seat of the morbid changes is the optic nerve between the chiasm and the eyeball. Buller attributes the sudden blindness in cinchonism to a rapid effusion into the lymph-spaces around the nerve, causing an external strangulation, too transient to produce the phenomena of papillitis, but sufficient to bring about edema and blanching of the retina, and a permanent impediment to the blood-carrying capacity of the central arteries.

The dose of quinine sufficient to produce blindness is very variable and largely depends upon idiosyncrasy. H. C. Wood[3] has seen complete temporary blindness follow the ingestion of 12 grains. Nearly always, however, the doses must be very large. Briquet[3] thought that troubles of vision did not occur ordinarily until, for several days, doses of from 23 to 30 grains, or, for a single day, doses of from 45 to 60 grains, had been given. On the other hand, enormous doses sometimes fail to affect vision, though blindness always precedes death when the dose has been fatal. Taussig[3] has recorded a case in which a dose of 1 ounce of quinine sulphate was given to a soldier suffering from ague. The only results were complete deafness and a kind of stupor, followed by recovery.

One case is worthy of detailed report, as it is a typical one, and presents the features of an experiment. It was observed by Dr. Garofolo[6] in Schnabel's Eye Klinik at Graz.

A healthy man took 3½ ounces of quinine by mistake for magnesia. After three-quarters of an hour his head felt heavy, the whole body began to tremble, he vomited, and diarrhea set in; the patient was not able to stand upright. About two hours after he had taken this enormous dose, it grew dark before his eyes so that he could not distinguish faces. The next morning the patient was totally blind, was bothered by loud ringing in his ears, and trembled so that he could neither walk nor stand. Seventeen hours after he had taken the quinine the patient was brought to the eye clinic, where the examination revealed the following: The cardiac sound was dull, but distinct; the pulse small, soft, and slow; both lids were widely opened, the

pupils were dilated, the left *ad maximum* and motionless; both eyes were totally blind. The ophthalmoscopic examination did not show any pathologic symptom. With the right ear loud voices were heard at 1.5 m.; with the left ear, at 3.5 m. distance. The senses of locality, of temperature, and of taste were normal. The sense of smell was deadened. Quinine could not be found in the urine.

Consciousness was unimpaired, but there were hallucinations. The next day no ophthalmoscopic examination could be made on account of the man's mental condition, but on the fourth day the patient was quiet again. At the ophthalmoscopic examination the lateral half of the optic discs appeared very pale; all the arteries and veins of the retina were morbidly contracted. The shifting fog which filled the whole visual area cleared for moments. The patient had, temporarily, vision of 6/43; then every sign of perception of light disappeared again. On the fifth day the central vision of the right eye was 6/8 and he read Jaeger No. 1; in the left eye, 6/36, and he read Jaeger No. 9. The field of vision was contracted upon all sides, but broadened on the following days. The field of vision seemed to the patient to be filled with a whitish, shifting fog, through which objects placed before him became visible only after fixing his eyes upon them for a few seconds, and were again engulfed by the fog, after having been viewed for a while. This condition prevailed until the end of the fourth month. The pallor, first confined to the lateral half, later spread over the whole optic disc and remained so up to the date of dismissal. The size of the bloodvessels also remained stationary.

The veins showed an interesting phenomenon. From the sixth day all the veins of the retina seemed to be filled with very fine grains of blood, between which appeared light spaces. This appearance could be traced to the finest branches, and has been observed in diseases in which there is diminution in the quantity of blood in the retina, especially in embolism of the central artery. Schnabel showed that it can be produced in the normal eye by pressing the ball.

This phenomenon, in connection with the contraction of all of the vessels of the retina, proved that an abnormally small quantity of blood, under diminished pressure, and with diminished velocity, passed the vessels of the retina. Dr. Garofolo draws from this the conclusion that quinine-blindness is caused by ischemia of the retina. This insufficient supply of blood explains why the retina tires with such extraordinary rapidity. But there must, he thinks, be still another operating factor. The blindness has been observed by Graefe with normal ophthalmoscopic appearances, whereas different authors have noted full restoration of vision, though the vessels of the retina remained contracted.

I close with Dr. Atkinson's words: "Without doubt, immense doses of quinine are frequently taken without disastrous consequences, and, while blindness may always be expected in cases of lethal poisoning, it is impossible to fix within definite limits the non-lethal doses that may be expected to induce it. Unquestionably it largely depends upon idiosyncrasy; and, although it hardly ever develops except after the injection of large quantities of the drug, and even then with the greatest absolute rarity, the results are so terrible that even the remote possibility of its occurrence should have an influence in placing some check upon the lavishness with which quinine is too often used in the treatment of disease."

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CLINICAL MEMORANDA.

MASKED ENTERIC FEVER.

BY PHILIP K. TAYLOR, M.D.,
OF KINGSTON, RHODE ISLAND.

IN the autumn of 1888 I was called to a case of severe cephalalgia in a young woman who had recently been married. I found a fairly well developed woman of twenty-one years, well nourished, of neurotic temperament, suffering from headache, which she stated was of monthly occurrence. Inquiry developed the following facts: At the age of four or five years she had scarlet fever, after recovery from which it was discovered that the vagina had become closed. The subsequent history was uneventful until the age of fifteen or sixteen, at which time she began to have headaches, soon recurring regularly every month and lasting from twenty-four to forty-eight hours. Treatment apparently had failed to lessen the duration or severity of these attacks.

With the headaches was associated acute pain in the breasts, with some swelling and tenderness. Rarely was there any abdominal soreness, and there had never been any abdominal enlargement. She had never had anything which could be considered as a vicarious menstrual discharge. Examination showed only a shallow cul-de-sac at the mouth of the vagina. The labia were normal in size and appearance, and the mons veneris well developed and covered with hair. The mammæ were well developed and normal. At this time the headache seemed to be relieved by caffeine and atropine.

For several months subsequent to my first visit I was called on to relieve these headaches, and during this time the question of an operation for the atresia was considered and advised. It seemed to me that should the making of a new vaginal passage fail to develop a rudimentary uterus, it would at least offer the means for an approximately normal sexual congress, which the married condition seemed to render necessary.

On June 11, 1889, the headache (unusually severe) was associated with an eruption noted on my record as "nettle-rash." On the 14th instant I was called again. Headache was still present, but not severe. The rash had entirely disappeared. There was rather marked debility, for which a tonic was prescribed. That night she had severe cramp in the calves of her legs, and it took several doses of morphine sulfate, gr. ⅛, atropine sulfate, gr. $\frac{1}{60}$, to relieve it. On the 19th I was called to prescribe for a diarrhea which had troubled her for about twenty-four hours. She had no fever, no headache, and there was no abdominal tenderness. Salol and Dover's powder controlled the diarrhea so effectually that on the 23d I was obliged to order laxatives, giving at the same time elixir ferri, quininæ et strychninæ, ʒj t. i. d., as there was little appetite and her debility persisted. On the 29th backache was complained of over the kidneys and there was slight fever, and on the next day she had pain and soreness all over, the pain being most marked in the head and loins. On July 1st nausea and headache seemed to be her only trouble, and in spite of treatment these continued until the 4th, when the nausea ceased, but the cephalalgia grew worse; she also grew slightly feverish and very nervous and irritable. The temperature was highest on the mornings of the 4th, 5th, and 6th, falling to normal in the afternoon and evening. At its highest in the mouth it was only 100.5°. On the 6th the mouth was sore and contained several patches of canker.

From the 8th to the 10th Mrs. S. was greatly troubled with insomnia, for which bromids were given, combined with the tincture of digitalis. Her strength was not very great, but nothing pointed to any immediate danger. At noon of July 11th I was hastily summoned and found her in imminent danger from heart-failure. Prompt administration of digitalis and whiskey hypodermatically caused her to rally. She was then put upon tr. digitalis, gtt. ij; tr. nucis vom., gtt. iij; whiskey, ʒjss, every hour in milk. At this time her pulse, irregular and thready, averaged 120, and her respiration was 40, shallow and sighing. She continued in this condition, dozing lightly, but rousing to take medicine and nourishment, until July 13th. During this time the digitalis failed to affect the pulse-rate, and she had several acute exacerbations of heart-weakness. At 8 A.M. of the 13th her pulse was 150; respiration 42, shallow and grunting; temperature 103°. She failed gradually, and died at 6 A.M. of the 14th. During the last three or four days she was slightly delirious. Suspicion of typhoid fever was entertained once or twice during the second and third weeks of illness, but entire lack of abdominal tenderness and tympanites, and the irregularity and low range of the fever caused the suspicion to be dismissed. The abnormal physical condition and the coincidence in point of time of her commencing illness with her monthly disturbance gave the sexual cause the preference as the explanation of the sickness. Two days before the death of the patient, feeling again that there was a possibility of a masked case of typhoid, I called Dr. H. K. Gardiner in consultation, and he concurred with me in that diagnosis. Throughout the course of the disease, tonics and easily-assimilable food had been given regularly, and every effort made to conserve the patient's strength. Otherwise the treatment was purely symptomatic.

An autopsy made two hours after death, by Dr. Gardiner and myself, revealed the following interesting conditions: On separating the labia vaginæ no vagina was found. What seemed to be the urethra proved on closer examination to be a blind pouch about 1 centimeter deep and the same in diameter. Into the anterior portion of this pouch opened the urethra, which was normal in size and appearance and also in its relation with the other parts of the pelvis. The labia were of normal size. On opening the abdomen the mesentery was found normal in appearance, containing a moderate amount of fat. A few of the mesentric glands were slightly inflamed. The peritoneum showed no signs of disease. The intestines were distended with gas, but contained no feces. In the ileum were well-defined ulcers limited to Peyer's patches. Other Peyer's glands seemed to have recently healed and one or two were congested and swollen. It may be said here that the possibility of miliary tuberculosis of the abdominal organs or tuberculous ulceration of the intestines was borne in mind during the autopsy, and that no signs of the former could be detected, and the ulcers found in the ileum were unmistakably typhoid. The spleen was somewhat enlarged and congested. The liver and kidneys appeared normal on section. As the patient had had no cough and no symptoms of any pulmonary disease, we yielded to the objections of the husband and left the thorax unopened.

The uterus was four cm. long externally and had an external diameter of one cm. There was apparently no uterine cavity. The vagina was represented by a ligamentous membrane about seven mm. in thickness. The Fallopian tubes and the ovaries were normal in size and appearance, except that the right ovary contained a small cyst about the size of a bean. We were unable to remove the parts for microscopic or other examination. The other cavities of the body were not opened.

It is of interest to know that the mother of this patient had atresia vaginæ following a fever, and was successfully operated on for the restoration of the passage. Operation had been urged in this case, and it is a question of much interest whether such an operation performed at the age of puberty would have led to the development of an arrested uterus and made a sexually perfect woman. Another question raised by this case is the moral right of such a woman to marry. In this particular case the man was fully aware of the woman's imperfections previous to the marriage; but even so, is not such marriage liable to lead to marital infidelity, or to repulsive abnormal sexual gratification? In regard to the typhoid fever I can only say that it is the most misleading case I have ever seen in a practice of over ten years.

SYNDACTYLUS.

BY A. L. BENEDICT, A.M., M.D.,
OF BUFFALO, N. Y.

THE following case I am enabled to report through the courtesy of Dr. Marcell Hartwig, who very kindly invited me to assist at the operation, and to make an examination of the anatomic condition.

The patient was a child, six days old, that presented the following peculiarities. Of the left hand the metacarpal bone and phalanges of the thumb were normal.

There were two other metacarpal bones and fingers. The proximal and middle phalanges were separate, so far as the bones were concerned, but the skin was united in a web, with a distinct crease beneath the bones. The distal phalanges inclined toward each other, and blended into one broad, bony mass. The nails were completely fused, showing a broad half-moon. The joints were movable, except in so far as they were limited by the obliquity of the distal phalanges.

The right hand, at first sight, appeared to be a second left hand without a thumb, but having three fingers. Closer examination showed that the little outer digit had only two phalanges, and was, therefore, a thumb. It was separated from the index finger by a cleft extending to the base of the nails, and by a web reaching half-way down the proximal phalanx. Below this point the fleshy union was almost complete. The remaining digit had also a separate nail, and was without bony connection with the index finger. The soft parts, however, were closely united throughout their whole extent. There was not even a web, only a deep dorsal crease, to separate the two fingers. On account of this crease the dorsal aspects of the fingers slanted toward each other, making an angle of 135°.

The left foot was normal, except for an unusually wide separation of the hallux from the lesser toes.

The right foot had four metatarsal bones and digits, the missing member being apparently the second toe, for the hallux was remote from the three other toes. The next two toes, corresponding to the third and fourth of a normal foot, had a web extending the length of the proximal and middle phalanges.

There was also an antero-posterior angle in the lower third of the right tibia, presumably due to an intra-uterine fracture. The mother had fallen down five steps two or three months before confinement, striking on her back.

The child was, with the exceptions noted, well formed and healthy. There was nothing to account for the anomalous development of the feet and hands. The parents were healthy young Germans, who had had two previous children without deformity, and no history could be elicited of any malformation in either family. The parents ascribed the deformities to a maternal impression. When about five months pregnant the mother had an altercation with a peddler, who startled her by suddenly holding up before her a mutilated hand.

The operation was conducted under chloroform-anesthesia, lysol being the antiseptic used. The fingers were separated in the usual manner by the sigmoid skin-flaps, except where the absence of a true web prevented. In these places iodoform-gauze was tucked between the fingers to prevent reunion. Correction of the tibial deformity was postponed, and operation on the toes was considered unnecessary.

HEARING RESTORED BY LARGE DOSES OF QUININE.

BY J. S. TRIPLETT, M.D.,
OF HARRISONVILLE, MO.

THE patient, a man of sixty-two years, is very robust, and has always had very good health. About eight years ago he noticed that the hearing in his right ear was steadily growing less acute, until he finally became absolutely deaf in that ear; the hearing in the left ear remaining normal.

Shortly after the deafness developed both lenses of the eyes became cataractous, the left maturing before the right. Two years ago, in September, the left lens was extracted. All went well until he "caught cold" in the aphakic eye, when severe opthalmitis set in. The pain was so severe that the opiate directed by his physician did not allay it. He told his physician to prescribe for him all the quinine he could stand. The quinine was put into large capsules, and he was directed to take one capsule every four hours; but instead of taking *one* he took *three* capsules every four hours. Cinchonism followed, and a "burning sensation" in the extremities, especially the lower, was experienced. The ocular inflammation subsided, but with loss of vision. With the subsidence of the inflammation hearing returned, and has been normal ever since. There was no discharge from either ear, nor was there tinnitus aurium in either. No cause could be assigned for the deafness. The man had never been troubled with catarrh of the naso-pharynx.

In the following March the remaining cataractous lens was extracted. No complication arose, and the man now has good vision in the eye.

It seems that in this case quinine simply reversed its usual modus operandi. I suppose there is no practitioner who has not seen deafness of varying degrees, temporary or permanent, caused by large doses of quinine.

It is known that quinine produces congestion of the peripheral sense-organs, and it is probable that the auditory organs were in such a peculiar condition that congestion brought about this happy result.

I think it also probable that, unnoticed, a slight discharge may have escaped during the height of the congestion. I do not know the quantity of quinine taken.

MEDICAL PROGRESS.

The Early Diagnosis of Chronic Nephritis.—For many years M. DIEULAFOY (*Lancet*, No. 3643, p. 1542) has sought to emphasize the importance of divers symptoms which, though often apparently trivial, are none the less significant of the existence of that very common malady, chronic nephritis. To these symptoms he has given the name of *petite urêmie* or Brightism. He regards albuminuria as an unreliable symptom of chronic nephritis. Of sixty cases under treatment in his wards during recent years albuminuria was absent in one-fourth. That nephritis really existed was proved in several instances post mortem. In another series of cases albumin disappeared in spite of the continued evolution of the disease. Some patients are albuminuric without being nephritic. Amongst the symptoms of nephritis M. Dieulafoy mentions auditory troubles. These consist in whistling or more sonorous noises in one or both ears, the causes being multiple (edema, paralysis of the acoustic nerve, variations in pressure). The frequency of these noises may be judged of when it is stated that they were present in thirty-four out of sixty cases. Menière's vertigo was

frequently complained of (thirteen times in sixty). Asphyxia of the extremities, first described by Maurice Raynaud, is one of the commonest symptoms of chronic nephritis. This begins as formication of the hands or fingers, and then the tips of the latter become bloodless, pale, and numb. This dead-finger symptom is found in all the forms and in all the stages of chronic nephritis. Itching, without possessing the same importance as the foregoing, is sometimes very severe. Frequency of micturition is well known as a symptom of the disease. To this symptom M. Dieulafoy has given the name of pollakiuria, to distinguish it from polyuria, many nephritics, in fact, urinating ten or twelve times a day without voiding a quantity above the normal. Cryesthesia (κρύος = cold), or sensitiveness to cold, is a minor symptom of nephritis. It is generally confined to the lower extremities. Cramps, especially nocturnal, in the calves of the legs are sometimes severe enough to wake the patient. Epistaxis, chiefly occurring in the morning, is often significant. Electriform shocks must also be counted in this category. At the moment of falling asleep or during sleep the patient is aroused by a single violent shock, recalling the effects of an electric discharge. The temporal sign is frequent. Here the temporal artery is distended, dilated, and tortuous without being atheromatous. This is, of course, due to high arterial tension. The foregoing symptoms, if associated in any one individual, are, according to M. Dieulafoy, sufficient to warrant the diagnosis of chronic nephritis. He is convinced that many persons apparently healthy are in reality nephritic. A confirmation of this diagnosis will frequently be found in the good effects of an exclusive milk-diet, which causes the disappearance of these seemingly insignificant troubles. M. Dieulafoy has also applied another test—viz., the degree of toxicity of the urine passed by patients affected with chronic nephritis. He finds that this secretion has in such cases lost a portion of its toxic properties.

Extensive Sinus-phlebitis Successfully Treated by Removal of the Petrous Portion of the Temporal Bone.—BIRCHER (*Centralbl. f. Chirurgie*, 1893, No. 22, p. 483) has reported the case of a woman, twenty-five years old, who had scarlatina in 1877, which was followed by suppuration of both ears, with total loss of hearing on the left and partial loss upon the right. In September, 1892, she was seized with chills, pains in the extremities, intense headache and mental confusion. The mastoid process and the lateral portion of the neck in the course of the great vessels on the left side became sensitive to pressure, but not red or tumid. On September 8th the mastoid process was opened and offensive pus evacuated. The bony wall of the transverse sulcus was perforated, and between this wall and the membranous investment of the transverse sinus lay a second collection of pus. After thorough evacuation and disinfection the wound was closed and dressed. The patient was temporarily relieved; but on September 11th hectic fever returned. On September 16th the oculo-motor nerve was found to be paralyzed, the pupil dilated, and pain was present in the course of the frontal nerve. On the 19th the abducens and the trochlear nerves were paralyzed. On the following day, after exposure of the bone, two trephine-openings were made, side by side, above the external auditory meatus, and through these the middle fossa of the base of the brain entered. The entire petrous portion of the temporal bone was carefully removed, but not until the apex was reached was a collection of pus found. The parts were now thoroughly curetted, cleaned, and disinfected, and an antispetic dressing was applied. Fever and headache at once subsided. In consequence of the removal of the portion of the facial nerve contained within the petrous bone the left side of the face was completely paralyzed. There was, besides, total ophthalmoplegia, with inflammation, in consequence of imperfect closure of the eye. There was diplopia when the lid was elevated. Accommodation was paralyzed. The fundus appeared normal. There was pain in the course of the first branch of the trigeminus and sensitiveness in the course of the infra-orbital division. Morphine and bromids brought amelioration but not cure. On November 15th the frontal nerve was resected, with entire relief to the pain. Some degree of movement in the left eye had by this time returned. The trochlear nerve and the branch to the levator palpebræ superioris were the last to resume their function. The restoration was but partial in the ocular and in the facial muscles, but by wearing spectacles during the day and covering the eye with a damp cloth at night the woman was able to resume her duties as a farm-laborer.

The Structure and Function of the Mammalian Heart.—As the result of a special research, KENT (*Journal of Physiology*, vol. xiv, Nos. 4 and 5, p. 233) has found that whereas in the past it has been supposed that the mammalian heart differed from the heart of cold-blooded animals, in having a complete break of muscular continuity between auricles and ventricles, it has now been shown that no such break exists, but that the auricles are connected with the ventricles both by strands of altered muscular tissue (especially well developed in the lower mammals) and by a more complex system of branching and anastomosing fibers, which penetrate the fibrous tissue between the two chambers (specially well developed in the higher mammals). Muscular continuity being established, and a variety of observations upon the human heart, such as the study of the reversed beat, the time-relations of the reversed as compared with the direct beat, the time-relations of the beat in animals of different ages, the effects of compression of the auriculo-ventricular groove and the study of the beat in the dying heart, all tending toward the explanation of the transmission of the contraction from auricle to ventricle as a case of simple muscular conduction, the ideas that have been held as to the nervous nature of the transmitting apparatus become less necessary than up to the present time they have been. The results of observations upon the hearts of cold-blooded animals, in which the connective muscular connection has long been known to exist, become to a certain extent applicable to the heart of the mammal, and many of the effects obtained by artificial interference with the muscular structures existing at the groove in cold-blooded animals may be obtained with almost equal ease in the case of the mammal. The passage of a contraction over the auricular wall also has been proved to occur independently of the larger nerves, inasmuch as the contraction can pass over a zigzag strip of tissue made by a series of

interdigitating incisions carried in any direction, and the free application of ammonia to all visible nerves does not arrest the contraction either in auricles or ventricles. The passage of the contraction over the cardiac tissue of the heart then appears to occur as a simple muscular wave, and the transmission of the contraction across the auriculo-ventricular groove appears to be of a similar nature.

Diabetes, with Diabetic Coma, in an Infant Eighteen Months Old.—DUFLOCQ and DAUCHEZ (*Revue de Médecine*, 1893, No. 6, p. 546) have reported the case of an infant, eighteen months old, always well from birth, but for two weeks constipated, in consequence, it was thought, of the use of sterilized milk, of which immoderate quantities (five pints daily) were taken. Within this time the child had become ill-tempered and depressed, and moaned at night. The urine was passed in excess. Notwithstanding its good appetite, the child had become greatly emaciated. The mother attributed the symptoms to difficult dentition, as two canines were about to make their appearance. There was no vomiting. The abdomen was distended with gas. The pulse was feeble, the face cyanotic. On the day after the first observation the child appeared to go into collapse, and became comatose. For the first time the possibility of diabetes suggested itself, but no urine could be obtained. The child could not be brought out of this condition, and death took place. Examination of a napkin that the child had worn disclosed the presence of a sticky powder, which upon solution and chemical analysis proved to be glucose. Two other cases of diabetes in infants under two years of age, in which death took place in coma, have been reported. In these also dentition was in progress. In another case diabetes developed, a few weeks after birth, in an infant that was nourished with corn-starch, a fatal termination ensuing. In one case, in an infant of seven months, diabetes developed four weeks after a fall from the nurse's arms. In some instances heredity seems to play a significant part. Among the symptoms noted in many of the cases was a change in character. Previously bright and good-natured children became morose and ill-tempered. Constipation and abdominal distention were common. The frequency of micturition was increased, and increased quantities of urine were excreted. There were also thirst, pallor, and emaciation. In some cases coma develops suddenly, and some terminate fatally. In other cases death has resulted from asthenia, pulmonary gangrene, broncho-pneumonia, or generalized miliary tuberculosis. Recovery is exceptional, but has been observed. Finally, it is pointed out that the rapidity of course is suggestive of an infectious origin.

Intubation in a Case of Laryngismus Stridulus.—POTT (*Münchener medicin. Wochenschr.*, Jahrg. xl, No. 16, p. 303) has reported the case of a child, a year and a half old, in which impending suffocation during an attack of laryngismus stridulus was relieved by the introduction of a tube into the larynx, in conjunction with the employment of artificial respiration. Neither the beating of the heart nor pulsation at the wrist could be perceived. On account of the abolition of reflex sensibility there was no difficulty in the introduction of the tube, for which purpose, to save time, the extubator was used. After five minutes the heart could again be heard to beat, and the pulse returned at the wrist. The cyanosis soon subsided. In the course of ten minutes more, spontaneous respiratory movements returned. The tube was retained for half an hour, when, on account of irritative cough, it was permanently removed. Other attacks occurred, but none of the same intensity as the one detailed.

Extirpation of Carcinoma of the Pylorus.—At a recent meeting of the Paris Academy of Medicine, DEFONTAINE (*Le Mercredi Médicale*, No. 24, 1893, p. 290) reported two cases in which he had successfully removed the pylorus for carcinoma. One had been operated upon a year previously and the patient had gained 30 pounds in weight. The second operation had been performed a month before. The patient was able to take nourishment on the fourth day; to arise from bed on the twelfth day; and to leave the hospital on the fifteenth day. In both cases the operation was rapidly followed by restoration to health. In a short time the yellowish, earthy appearance was replaced by a clear complexion. The results were more satisfactory than could be attained by gastro-enterostomy, as the orifice of communication between stomach and intestine remained sufficient, and the offending cause was removed.

Spina Bifida Cured by Operation.—WALTHER (*Rev. des Mal. de l'Enfance*, May, 1893, t. xi, p. 193) has reported the case of a child that at birth presented a spina bifida in the sacral region, the walls of which were so thin that immediate operation was determined upon and carried out four hours after birth. By means of a capillary trocar, about seven and one-half ounces of fluid were gradually evacuated. The sac was dissected up and the opening that remained closed by means of sutures. The recovery was excellent, and eighteen months later the child was in good condition and learning to walk.

THERAPEUTIC NOTES.

The Use of Methylene blue in the Treatment of Malaria and Diphtheria.—KASEN-BECK (*Centralbl. f. klin. Medicin*, 1893, No. 25, p. 521) has reported the employment of methylene-blue in the treatment of thirty cases of malarial fever and twelve of diphtheria with entirely satisfactory results.

In the cases of malaria the remedy was employed only when quinine and its salts disagreed, or after these and other drugs, including phenacetin, antipyrin, phenocoll hydrochlorid, ammonium chlorid, tincture of helianthus, eucalyptus globulus, and arsenic had failed. The diagnosis was based upon the physical examination, the blood being examined in only one instance, with the result of finding malarial parasites; the cases were, however, otherwise typical. The patients varied in age from two and one-half to forty years. Three suffered from masked intermittent fever; in one, manifested by trigeminal neuralgia, in another by headache, and in the third by pains in the eyes for five years. It was in the last case that plasmodia were found in the blood. The remaining cases presented intermittent fever of varying type, mostly, however, tertian and quartan. The

duration of the disease had varied from three weeks to a year, mostly, however, from three to six months. The drug was given four or five times a day, at intervals of an hour, in capsules, in doses of 1.5 grains, with 2.5 grains of powdered nutmeg. The paroxysms ceased soon after the institution of the treatment. In only one case did a recurrence take place, for the dissipation of which the solution of potassium arsenite, in ascending doses, became necessary. In five cases vomiting followed the ingestion of the first one or two doses. In most cases there was increased frequency of micturition, unattended, however, with pain. In some cases, in which the nutmeg was omitted, and in some in which full doses (4.5 grains) were given, strangury occurred; in one case hematuria occurred, but ceased after the withdrawal of the remedy.

In the cases of diphtheria a watery solution (1 to 9) was applied to the affected surface two or three times a day by means of a cotton swab. The temperature soon declined; edema and inflammation rapidly subsided, and the membrane was rapidly cast off. The urine became slightly discolored. It is suggested that small doses of the remedy be also administered internally. To facilitate the desquamation of the membrame small doses of pilocarpine (gr. $\frac{1}{25}$ to gr. $\frac{1}{15}$, thrice daily) were additionally prescribed. Recovery ensued in every instance. In three cases paralysis of the palate occurred, and in one of these paresis of the lower extremities.

A Case of Paraldehyde-habit.—ELKINS (*Edinburgh Medical Journal*, July, 1893, p. 39) has reported the case of a man, sixty-five years old, who for seven years had been troubled with insomnia of gradually progressive intensity. On one occasion small doses of paraldehyde were directed and proved useful. A habit was soon acquired, and the doses were rapidly increased, so that after two years and two months sixteen ounces of the drug were being taken in the course of a week. Emaciation became pronounced, and symptoms resembling those of delirium tremens made their appearance. The insomnia was most distressing. There was general tremulousness; the gait was feeble and unsteady, and all movements were slowly performed. The action of the heart was weak and irregular. The pulse was seventy-four, and intermitted every ten or twelve beats, while the volume of the beats was unequal. Flatulence was marked, and the bowels were costive. The breath smelt strongly of paraldehyde. The patient was nervous, restless, and anxious about his condition. An attempt was made to gradually withdraw the drug, but was attended with a good deal of difficulty; the patient developing hallucinations of sight and hearing, and becoming quite unmanageable, and, for a time, refusing all medicine. On a few occasions fifteen grains of sulfonal were given. Finally, gradual improvement set in, and after the lapse of about three months the man was quite restored to health.

Treatment of Gonorrhea.—The line of procedure followed out at the clinic of Blaschko, at Berlin, is thus described by GEBERT (*Münchener medicin. Wochenschr.*, 1893, No. 25, p. 491). In recent cases injections are not used, but instead oil of santal is given six times a day in capsules, each containing 7½ minims. If the patient cannot swallow capsules, the following prescription is given:

℞.—Olei menth. piper. . . . gtt. x.
Olei santal. . . . . ad ℥ss.—M.
S.—Gtt. xv thrice daily.

This treatment will in most cases lead to recovery in the course of three weeks. Should the secretion persist after this time injections may be begun. Of these the best are zinc sulfate, 0.5 to 100, and potassium permanganate, 1 to 200. Subsequently astringents may be employed: tannic acid, 1 to 200, or argentic nitrate, 0.03 to 100. In addition to the local treatment the diet must, of course, be properly regulated. In case of epididymitis recumbency in bed must be insisted upon and compresses applied. In cases of chronic gonorrhea of the anterior urethra injections of argentic nitrate, 1 to 2000, or stronger, are employed. In cases of chronic gonorrhea of the posterior urethra injections or applications of argentic nitrate are made.

Codeine-intoxication.—SPRATLING (*Medical Record*. No. 1184, p. 77) has reported the case of a married woman, who, immediately after dinner, took sixteen half-grain pills of codeine. An hour later nausea appeared, followed by the vomiting of a small quantity of semi-liquid matter. There were marked irritability and restlessness. Convulsive movements, involving the entire voluntary muscular system, but most marked in the upper extremities and in the head, occurred at frequent intervals. There was intense irritation of the skin all over the body, but most annoying on the flexor surface of the forearms and on the back. The surface of the body was warm and dry. The pupils were fixed in pin-point contraction. The respirations numbered twelve per minute. There was complaint of great thirst and an uncomfortable feeling of fulness of the head. After the painful irritation of the skin had been relieved by sponging the body with a solution of sodium bicarbonate, the woman sank into a slight doze, from which she would awake in a few minutes with a start. The skin was hyperesthetic to a marked degree. The usual treatment for opium-poisoning was employed, and in a few hours marked improvement had taken place, leading soon to perfect recovery.

For the Dyspnea of Pulmonary Tuberculosis.—ROBINSON (*Medical Record*, No. 1184, p. 77) recommends a tincture of "rosin-weed," prepared according to the following formula:

℞.—Ext. fluid silphii lancinati (radicis) . f. ℥j.
Spts. vini rectif. . . . . f. ℥iv.
Aquæ . . . . . f. ℥ij.—M.
Filter, Sig. f℥ss–f℥j as a dose.

For Chronic Eczema.—

℞.—Acid. salicylic. . . . . gr. xxx.
Zinci oxidi . . . . . ℥vj.
Pulv. amyli . . . . . ℥vj.
Vaselin. . . . . ℥jss.—M.

S.—To be applied topically daily and not to be washed or rubbed off.—*The Practitioner*.

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THE DISORGANIZATION OF MEDICAL SCIENCE.

ONE of America's well-known scientists, in charge of an ethnologic exhibit at the Columbian Exposition, was asked if there were no distinctive medical exhibit showing the progress of medical science and art. "Progress of Medicine!" said he, contemptuously. "There is no such a thing!" From further conversation it was clear that, in the opinion of the gentleman, by the term medical science is only to be understood the curing of a sick person in its most restrictive sense. It may be asserted, moreover, that this limited definition is that tacitly agreed upon by the general scientific mind of the day. It is becoming more evident that hygiene, with its hundreds of subordinate departments, and its thousands of meeting-points with human life, is becoming autonomic, so far as medicine is concerned, and that soon hygiene and medicine will not only be possibly distinct callings, but that they will necessarily be distinct. Bacteriology is also tending toward a similar autonomy. In a word, to generalize the two aspects, we may say that preventive medicine and curative medicine are slowly drifting apart, each segregating into distinct fields of study and activity, to be pursued less and less by the same individual. Even the medical profession is in various ways assenting to the breach. It is not uncommon to hear some semi-contemptuous remark about the "laboratory doctor," the "bug-man," or the "sewer-physician."

But it remains an infinitely serious question whether this is a wise movement or not. It may even be held one of the most important things the profession has to ponder and decide about during the next generation. Its significance is manifest in the fact that with the progress in civilization cure must more and more yield place to prevention, so that as all wise minds seek to forefend coming ill, the function of the therapeutist as such must be one of progressively lessening influence, whilst that of the preventer must be one of continuously enlarging influence. If the treatment of smallpox a century ago had been the sole duty of the physician, he would now find himself out of work. Thus as one after another we learn the preventions of diseases, the rôle of the therapeutist becomes more and more sharply restricted with each new discovery.

It may be said that it matters not by whom or by what class of men the work is done, so that the work is in truth done, well done, and so that society receives the protection. In answer, it should be remembered that there is a doubt in the minds of many if the tendency toward differentiation of function in our work of life is not already excessive. Some specialism there must be, even much, but so far as medicine goes it is agreed that all specialists must first have a thorough grounding in general medicine, and that they must well understand the physiologic and pathologic relations of the special organs and objects of their own study with those of other specialists. Moreover, prevention is never absolute, and no disease is, so far as we can judge, ever wholly stamped out. Hence the curers will always have office, and work to do. Prevention, too, not seldom runs, or may run, into pathogenesis, and the sanitarian or bacteriologist must be on the alert to see that prophylaxis shall not indirectly become the origin of disease. He must be a physician to keep from being a disease-producer.

A multitude of weighty reasons at once arise in the mind, all going to show that if the two departments of curative and preventive medicine become separated, each officered and manned by men knowing little or nothing of the work, methods, and ideals of the other, it will be the worse for that society for whose welfare we labor. The consequent narrowing of the physician's sphere of labor and usefulness will serve to further emphasize the contempt

with which the populace already looks upon the doctor-world. Medical sectarianism will be immensely increased by it, and heaven knows that few greater misfortunes could happen than greater popular ignorance as to the value to the world of an enlightened and powerful medical profession, and of the disgrace of medical sectarianism.

Those, therefore, who shape our legislation and mould popular sentiment, should, we think, struggle against the disorganizing tendencies of our science. The work of preventing and of healing disease is essentially one work, and the further apart they drift the poorer will the work be done, the worse for society, and certainly the worse for that part that is content to become, in the ever-narrowing sense of the word, medical. It should never be forgotten that JENNER, KOCH, and LISTER were physicians. It will be a profound professional misfortune if future discoveries and progress in preventive medicine shall be made by non-medical men. Then will the future scientist ask, with all the more reason and justified scorn, "What progress, pray, is there to chronicle in medicine?" The genuine progress in medicine consists, indeed, in making medicine and therapeutics unnecessary. Those who have true pride in their profession will not willingly give up the work that rightfully, and by inheritance, has fallen to them, but while prompt to relieve the present evil and lessen bad results, they will also seek to prevent the coming evil, and to neutralize the causes whence flow the bad results. Sanitary science, bacteriology, and all those biologic studies that go to make up preventive medical science must, therefore, be integral parts of the curricula of every true medical school; the teachers of these branches should be physicians; the boards, National, State, or City, of public health, quarantine, etc., should at least have medical representatives, if not be entirely made up and governed by medical men. Throughout the land every physician should actively interest himself in whatever pertains to the health of the community, thus showing by word and deed that it is our proper function to prevent as well as to heal disease, and that the two things must be done by one person, and by one profession.

A NEW PROCEDURE IN MEDICAL TESTIMONY.

PHYSICIANS have unfortunately frequent opportunities to share, with other busy workers, the exasperations incident to attendance at court. To those not in the law, its dilatory and interrupted methods of business seem inexplicable and even disgusting, and it is not surprising, therefore, that efforts should be made to secure reforms, to which, however, the lawyers are too often opposed. Any progress is of interest, and it worthy of note that the State of New York has recently passed a law designed to convenience physicians and surgeons engaged in hospital duties. The act provides that in suits for damages for accidents to persons, medical witnesses who may have become cognizant of the facts in the course of their service in any hospital may give their testimony before a referee at a time and place to be arranged for each case, and such testimony may be read in court in lieu of the personal appearance of the witness. The trial judge is, however, empowered to order the attendance of the witness. The law applies, of course, to civil actions only. No State law could set aside the privilege guaranteed by the Constitution that a prisoner shall have compulsory process for his own witnesses, and must be confronted by the witnesses against him. The act also limits its operation to hospital cases; it does not extend to one who may see an injured person in the regular course of practice.

Information as to the circumstances that have brought about this somewhat marked departure from legal methods is not at hand, but it was possibly the result of corporation influence. It seems unlikely that a State Legislature, constituted like that of New York, would take such a step solely as a concession to the medical profession. The act will probably operate to the advantage of those corporations, such as steam and tramway lines, which are frequent defendants in suits for injury to persons. In such cases the testimony of the doctor first attending the injured person will usually be unfavorable to the company defendant, and anything that can diminish the vividness or directness of his testimony will inure to the disadvantage of the party by whom the witness is called. Now the interest that a hospital resident or consultant takes in an accident case is usually only as an incident of practice. He is not likely to feel obliged to make a sacrifice of his convenience to assist in securing a heavy verdict for the patient, and will, therefore, take advantage of the opportunity to avoid attendance at court. The defending company is generally wealthy and well equipped for legal battles; good medical talent will be secured by liberal fees, and the testimony in person by such witnesses will go far toward overcoming

the effect of a tedious list of questions and answers read to a jury. It is not improbable, therefore, that judges, recognizing the disadvantage to which the plaintiff is subjected, will send for the witness, at least in rebuttal, and the gain to the medical officer will be slight. On the other hand, the act may lead to the offer of considerable fees to the hospital officer, contingent upon getting them "out of Mr. Pickwick," so to speak, and thus extend the already too frequent practice in this respect.

As already noted, the act does not apply to general practitioners who may see a case in their daily routine. Why this restriction was made it is difficult to determine. In truth, the hospital resident will be probably least inconvenienced by the obligation to attend court. He can generally secure a substitute from among his colleagues, and can arrange to attend to much of his routine duty before or after the hours of court. His absence is in the line of his duty. His patients are almost always under the care of well-trained nurses. The general practitioner has no such advantages. The hours that he will be wasting in court are those that he usually devotes to visiting his patients, and many of these will be without competent attendance other than that which he affords them.

Experience is the only test of legislation, and it will be interesting to watch the effect of this new provision, regretting, however, that if a material departure in the status of the medical witness was to be made it was not in some direction in which relief is more urgent.

CONGENITAL MYOTONIA.

LEYDEN in 1874 first described an affection in which voluntary movement after a period of rest was followed by tonic contraction of the muscles brought into play, the spasm subsiding as the effort was persisted in. Two years later the disease was independently described by THOMSEN, an English physician, himself a victim of the disorder, and in whose family it had existed during five generations. The disease is quite rare, the number of recorded cases probably not exceeding half a hundred. The symptoms commonly appear early in life, sometimes soon after birth; not rarely more than one member of the same family suffers. The lower extremities are usually more profoundly involved than the upper, and the face, as a rule, escapes. The affected muscles in time undergo great increase in size, though they do not become proportionately powerful. The spasm is aggravated by attention and emotion. Sensibility and reflex action present no abnormality. Muscles and nerves exhibit a characteristic electric reaction: response and relaxation are both slow, while voltaic stimulation is followed by wave-like contractions passing from kathode to anode. Treatment has thus far been unavailing. In the absence of autopsies the precise nature of the disease has been uncertain, although examinations of excised portions of affected muscles have disclosed a condition of muscular hyperplasia. DEJERINE and SOTTAS (*Compt.-rend. hebdom. des Séances de la Soc. de Biol.*, No. 23, 1893, p. 669) make an interesting contribution to the subject of congenital myotonia, reporting the results of a careful post-mortem examination in the case of a man thirty-seven years old, who had been under observation for five years, and had presented characteristic symptoms from infancy, death occurring as the result of an attack of acute nephritis. The findings were entirely in accord with those of previous observations, but in addition careful examination failed to disclose a lesion of the central or of the peripheral nervous apparatus. The hyperplasia of the muscles was found to be due to changes in the primitive fibrillæ, and these were considered to be secondary to the increased functional activity, as they were not present in all of the muscles. Congenital myotonia will thus fall into the group of myopathies, together with pseudo-hypertrophic paralysis and its congeners.

EDITORIAL COMMENTS.

Cholera in Europe.—It is reported that cholera has appeared in Algeria—seventy or eighty cases—although the fact is denied by the official reports. At Marseilles, France, with from twelve to fifteen fatal cases daily, the British Consulate has ceased giving clean bills of health, and the French sanitary authorities have at last officially admitted the existence of sporadic cases. In the south of France generally the disease is spreading from town to town. A case of cholera has been reported in Piedmont, Italy, and several cases a day are reported from Naples, though denied by the authorities. In Arabia, Turkey in Asia, Russia, etc., the progress of the disease is slow but continuous. No new cases have occurred in England.

The Bad Physician and the Bad Musician.—There is something more than fancy, something more than sentiment, something even far more than analogy, hidden in

these facts: A good violinist, who knows and loves his instrument, will never allow a beginner or a bungler to play upon it. He knows that it will be all but spoiled in the hands of a bad player. By producing inharmonious vibrations in the wood the molecular structure is itself disturbed and confused. The longer, moreover, the attuning of the instrument by accurately harmonious vibrations, the more perfect the response of the wood, and the purer its tones. Just so it is with medicine, the therapeutic instrument, art, and artist. If we love medicine, we will not give the precious instrument to the bad and incapable, to damage irreparably its most intimate and ultimate structure.

The "Patent-medicine" Advertiser.—The American people should sell themselves body and soul to the nostrum-vender, or else combine to get some laws passed to curb his boundless greed and impudence. Go where one will, every barn, house, field, rock, or sign-board is turned into a blazing memento of our national disgrace, and of medical humbug. Pills, pills, pills! "The Gentleman's Friend," "Blood-regulators," "Pectorals," tonics, and heaven knows what else! Wherever the eye of child, girl, maid, man, or mother turns, there is the allusion, open or half-concealed, almost always filthy, to suggested disease. The images called up are those of pathologic conditions of the kidneys, of the genito-urinary organs, of the discharges from the bowels, of syphilis—of all the results of vicious, moral, or unphysiologic living. Is there no way to put a stop to such outrages against common decency?

Aluminum Drainage-Tubes.—*Apropos* of a brief comment in the NEWS of July 22, 1893, p. 107, an esteemed correspondent calls our attention to the fact that "aluminum drainage-tubes have been largely in use for several years. To my own knowledge for five or six years they have been made and kept in stock by the instrument-makers of Paris. They were first made by M. Collin, of that city, of three sizes of twenty centimeters in length, under the instructions of M. Lucas-Championnière, and are figured in the French catalogues of surgical instruments as 'Drains en aluminum du Championnière.'"

Purification of Water by Electricity.—It is reported that an "electric disinfectant" has been discovered by an electrician of New York, and, as a test, successfully applied to the purification of a large body of Croton water by Dr. Cyrus Edson. The details of the method are not given, but it is said that a powerful electric current passed through sea-water produces a fluid which has powerful antiseptic properties. This fluid in small quantities merely mixed with water containing nitrites, nitrates, and ammonium compounds, is said to dissipate these substances entirely.

The Word Practitioner.—We wish some professional etymologist would tell us the origin of the word *practitioner*, and publish the name of the lunatic who dared to coin such a barbarism. A man might be a practicer of medicine, but we do not understand how he could be a practitioner any more than one could be a musicianer or a mechanicianer. We have the words physician, doctor, etc.; why perpetuate the absurdity, practitioner? Let us drop it!

The New York Herald exposes another Bogus Medical College, passing under the name of "The Preparatory Medical College of New York." A certain Dr. W. M. Rew was the entire faculty and treasurer, and he sold a reporter a diploma for $20, after which he was arrested.

SOCIETY PROCEEDINGS.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-sixth Annual Meeting, held at New London, Conn., July 18, 1893.

DR. GORHAM BACON, of New York, presided.

DR. LUCIEN HOWE, of Buffalo, N.Y., read the first paper, which was entitled "Note on the Comparative Anatomy of the Ossicles." Failing to find in various works on comparative anatomy adequate information in regard to the bonelets of the ear, an effort was made to obtain the ossicles from animals of widely different species. The view that the long process of the malleus is bony in early life, later degenerating into connective tissue and appearing as a ligament, seemed to be confirmed.

The view with regard to the malleo-incudal joint in the human being, that rotation in one direction is practically unlimited, while in the other direction it is suddenly arrested, was verified in the orang and some of the higher animals. It was found that the form of the hammer and anvil differs greatly, not only in different genera, but also in individuals of nearly allied families. On the other hand, the stapes is remarkable in having almost always a certain approach to the stirrup form.

DR. ALBERT H. BUCK, of New York, read a paper on the "Strongly Counter-irritant Effects of the Usual Mastoid Operation." It was pointed out that while the main object in opening into the mastoid process is the establishment of free drainage, in not a few cases the derivative and counter-irritant influence of the operation plays a most important part in effecting a cure.

In the majority of cases the disease will be cured without this additional counter-irritation, but in those cases in which the disease of the ear has set up more or less active intra-cranial inflammation, this counter-irritant power may be sufficient to turn the scale from a fatal to a favorable issue.

DR. HERMAN KNAPP, of New York, read a paper entitled "Extensive Caries and Necrosis of the Temporal Bone of a Child; Mastoid Operation; Death from Exhaustion and Hemorrhage."

The patient was a feeble, anemic child. For a few months there had been copious and offensive otorrhea of the left side. The mastoid region was swollen and soft, but no fluctuation was present. The mastoid was exposed, but there was no sub-periosteal collection of pus. The outer table of the mastoid was removed, exposing a large cavity filled with necrosed bone and granulations bathed in pus. This was removed and the cavity packed with corrosive-sublimate gauze. The child improved to some extent, but there was no tendency to repair. Some time later, and a week before death, the probe revealed that the

posterior wall of the bony portion of the external auditory canal had begun to loosen itself, but it was too firmly attached to permit of extraction. Careful probing of the ear was followed by the escape of dark blood. The wound was dressed and the child went home. During the night there was a continuance of the bleeding, and the child died on the following morning. It was impossible to obtain an autopsy. The amount of blood lost did not seem large enough to have caused death, but in the precarious condition of the child it may have hastened the fatal result.

Dr. Knapp further reported "A Case of Chronic Middle-ear Suppuration with Grave Brain and Lung Complications; Opening of Mastoid and Wounding of Lateral Sinus; Complete Recovery."

The patient was a woman, thirty-eight years old, who complained of pain, discharge and deafness in the left ear. For a year there had been occasional attacks of inflammation. The upper posterior part of the drum-membrane was red and bulging, and there was a large perforation in the lower part. There was also catarrhal rhinitis. Appropriate treatment was advised, and during the next three months the condition fluctuated considerably. On three occasions the condition became so aggravated that exploratory operation was decided on, but on each occasion sudden improvement occurred and operation was deferred. Finally, the disease took a more serious turn, with pain in the head and swelling and tenderness of the mastoid, and pain on percussion about two inches back of the ear. Operation on the mastoid was advised, but was delayed at the request of the patient on account of the advent of menstruation. The symptoms became more aggravated, although there was no discharge from the ear. When the mastoid was opened no pus or diseased bone was found. The bone was softer and more vascular the deeper the operation went. Chiselling still deeper, a sudden gush of dark blood took place, ceasing after a minute's pressure. The cavity was packed with corrosive-sublimate gauze. The ear showed no reaction, but for a week the patient was in a critical condition from a complicating pleuro-pneumonia. From the ninth day after the operation the patient improved steadily and made a complete recovery. It was thought that the attic disease was the origin of the difficulty, and that the inflammation extended into the skull through the roof of the drum-cavity.

Dr. J. Orne Green, of Boston, pointed out that the copious hemorrhage that sometimes takes place and is attributed to injury of the lateral sinus, may be due to the opening of a large diploic vein.

Dr. T. Y. Sutphen, of Newark, N. J., reported "Autopsies in Two Cases of Complicated Middle-ear Disease." The first case was in a man, thirty years old, with a history of long-continued middle-ear suppuration, who presented an immense abscess involving the left mastoid region, which was opened. During the next few days the patient became worse, with the development of cough, elevated temperature and dulness on percussion over the right side of the chest, and in a week he died in coma.

The autopsy disclosed an abscess-canal outside of the dura mater, extending to the cerebellum, where it penetrated the dura and led to an abscess in the brain-tissue, adjacent to which were other spots of softened tissue. There were also the lesions of a septic pleuro-pneumonia.

The second case was one of right middle-ear inflammation lasting several weeks. For ten days there had been severe headache on the right side, but no swelling or tenderness over the mastoid and no paralysis. Three days later the patient became comatose, with a temperature of 104°. On the following day the mastoid was opened, but no pus was found. The patient died the next morning.

The autopsy showed no communication between the mastoid and the cranial cavity, although the meningeal space contained a quantity of sero-purulent fluid. The right lateral sinus contained a large, softened clot, communicating with the meningeal cavity. The entire meningeal surface of the cerebellum was bathed in pus. No abscess was found in the brain-substance.

Dr. Emil Gruening, of New York, read a paper entitled "Fatal Thrombosis of the Lateral Sinus, with Autopsy." He reported the case of a woman, thirty-eight years old, who had had an occasional discharge from the left ear for six years, but for two months a profuse discharge. There were two perforations in the drum-membrane, and the mastoid region was red, swollen, and edematous. The ordinary mastoid operation was performed and pus and granulation-tissue found. The lateral sinus was exposed, but it did not pulsate. Four days later pyemic symptoms manifested themselves, with marked and sudden variations in temperature. There were also evidences of lobar pneumonia. The patient died, and the autopsy disclosed pneumonia and thrombosis of the lateral sinus.

Dr. Clarence J. Blake, of Boston, presented the statistics of the Aural Department of the Massachusetts Eye and Ear Infirmary for the three months, April, May, and June, 1893.

Dr. J. Orne Green, of Boston, exhibited a large number of pathologic specimens of ear-disease and gave reports of the cases.

Dr. Clarence J. Blake, of Boston, read a paper on "Stapedectomy and other Middle-ear Operations." As the result of an investigation conducted during the past year as to the feasibility and advisability of extracting the stapes in chronic non-suppurative disease of the middle ear, it was concluded that in those cases of non-suppurative disease of the middle ear, with a high degree of deafness, the operation of stapedectomy is most likely to be futile, because of the degree of fixation of the base of the stapes, leading to fracture of the crura in the attempts at removal.

In the class of cases in which stapedectomy has apparently given the best results, viz., fixation of the stapes as a sequence of chronic suppurative disease, it is by no means certain that equally good results could not have been obtained by surgical mobilization and subsequent care.

While removal of the stapes is by no means so hazardous a procedure, it still opens up the possibility of interference to an unknown degree with the most important part of the organ of hearing, and an almost equally important peripheral organ of equilibrium.

In order that the operator might, in the non-suppurative cases, avail himself of the coöperation of the patient and apply in the progress of the operation a series of

hearing-tests to determine the location of the principal obstacle to sound-transmission and determine the extent to which surgical interference was advisable, the plan of "exploratory tympanotomy" was devised.

Dr. Blake expressed a preference, when possible, in cases of non-suppurative disease of the middle ear, to begin with exploratory tympanotomy, which can be performed without general anesthesia, leaving it to be determined by the examination and tests made during the operation as to whether the stapes can or shall be removed or not. In suppurative cases it is preferable to first perform synechtomy, tenotomy, and crural circumcision with, if necessary, the additional application of an artificial drum, allowing a proper time-limit for the determination of the effectiveness of these procedures before submitting the patient to the final operation of stapedectomy.

Dr. Frederick L. Jack, of Boston, presented a communication entitled "Further Observations on Removal of the Stapes." He reported the employment of the procedure in thirty-two cases, in addition to the sixteen previously reported, with encouraging results. It was pointed out that the operation is followed by the best results in the class of cases in which, from the increase of tissue, the effects of suppuration or hypertrophic inflammation, the stapes offers an obstruction to sound-waves; by its removal the hearing is improved. The results in cases of otitis media chronica insidiosa, on account of failure to extract the foot-plate, are not encouraging. Inflammatory reaction is unusual, and is followed by no bad results. The hearing is not necessarily impaired by the subsequent growth of a thin cicatricial membrane over the fenestral niche. Some cases of tinnitus and aural vertigo are relieved, and there is little likelihood of causing permanent vertigo in cases in which this had not previously existed. It rarely happens that a patient improves for all tones. Improvement in hearing the human voice is out of proportion to the improvement for other sounds, and the reverse sometimes occurs. In some cases failure may be due to hemorrhage into the labyrinth at the time of the operation. This is believed to be a rare complication, but may have occurred in one or two cases. In removing the carious ossicles the stapes, if found diseased, should also be removed.

"Dr. C. H. Burnett, of Philadelphia, presented a paper on "The Surgical Treatment of So-called Ménière's Disease (Aural Vertigo)." He maintained that the name "Ménière's disease" is inaccurate and unjust —inaccurate because it is indiscriminately applied to all forms of aural vertigo, regardless of the seat of the otic lesion, whereas Ménière attempted to prove the existence of a disease of the semicircular canals as the only cause of aural vertigo, an entirely untenable hypothesis; and unjust because Flourens in 1822, and Deleau in 1836, described aural vertigo more accurately than Ménière in 1861, and Deleau came much nearer than any previous observer to the solution of the origin of aural vertigo in placing the cause in lesions of the middle ear.

Aural vertigo due to lesions in the middle ear is of frequent occurrence. It is often not recognized, especially by the general practitioner, as aural vertigo, nor even as the so-called Ménière's disease, in which, to say the least, the cause of the vertigo is placed in the auditory apparatus. It is not unusual for aural vertigo to be attributed to intestinal disturbance, or to "neurasthenia," instead of to an aural lesion. Hence, the diagnosis being erroneous at the outset, the treatment is wrong and the patients do not recover.

True aural vertigo, due to a lesion in the middle ear, chiefly from chronic catarrh of the tympanic cavity, is paroxysmal in character and attended with tinnitus and deafness in the affected ear. It is caused by the inward pressure exerted upon the labyrinthine fluid by the retracted and ankylosed ossicles. The foot-plate of the stapes is thus unduly pressed into the oval window, and there held by the forces named, paroxysmally and for longer or shorter periods.

The treatment consists in removing the retractive force and liberating the stapes, preferably by the surgical removal of the incus. The removal of the incus, which in its relation to the other two auditory ossicles, may be likened to a keystone in an arch, destroys the arch, and the retractive and impacting power of the malleus can never again be exerted upon the stapes. Thus the stapes is liberated and pulled outward by the stapedius muscle, relieved of the antagonism of the tensor tympani. The removal of the stapes from the oval window does not seem necessary for the relief of deafness or of aural vertigo. Liberation of the stapes and not its entire removal is all that is necessary in most cases.

Dr. Robert Barclay, of St. Louis, read a paper entitled "On the Difficulty of Operation in the Depths of the Ear-canal; with Description and Drawings of New Instruments for Surmounting it." He stated that the difficulties attendant upon deep operations within the ear are in large part due to the peculiar conformation of existent instruments— specula and shafts of blades. To obviate the objections belonging to the ordinary aural specula, Dr. Barclay has designed a new speculum, which consists of two parts, a tube and a handle. The tube represents the inner portion of the ordinary speculum, divided obliquely at two-fifths its distance from the outer rim. The handle is detachable and is made in three forms: like a spoon-handle, fixed to the tube dipper-shaped; like an imperfect ring, or like a split tailor's-thimble. By means of the handle, the instrument is held in place by the finger or thumb, the rest of the hand being free. By dispensing with that portion of the speculum that projects beyond the intertragal notch of the ear, this instrument allows a hand-rest for steadiness, and a maximum of shortening and of movement of instruments in operations within the ear.

Dr. Barclay has also devised a shaft and handle so proportioned as to combine the desirable features of those already in use, without their defects. The essential features of the instrument are that the aluminum handle is of dimensions and weight most favorable to delicate and accurate manipulation; it is twice bent, the long axis of the handle passing directly through the operative extremity of the operating shaft. The lateral shaft joining the handle to the operating shaft is of length only sufficient to permit the greatest illumination and vision along and beyond the operating shaft. The operating shaft is of of the smallest dimensions possible and is at right angles to the lateral shaft. The instrument is made in two

forms. In one the handle and shaft are in one piece. In the other, the instrument is in two parts and separable, and interchangeable blades of such extremities as may be desired may be secured to the handle.

Dr. Samuel Theobald, of Baltimore, read a paper entitled "Aural Reflex of Unusual Character Due to Impacted Cerumen." A woman, about forty-two years old, the mother of a large family, and not of a nervous temperament, had suffered for six months with an annoying cough and with attacks of inability to swallow food. These symptoms increased in severity, and it was noticed that any manipulation of the right ear brought on an attack. A plug of cerumen, which probably had been forced down upon the tympanic membrane by unsuccessful attempts to remove it, was discovered in the right ear. It was removed by syringing and all the unpleasant symptoms at once disappeared.

Dr. B. Alex. Randall, of Philadelphia, read a paper on "The Statistics of Ear-Disease."

Dr. Gorham Bacon, of New York, exhibited a new form of incus-hook, devised by his assistant, Dr. Hewit.

A paper entitled "A Contribution to the Brain-surgery of Ear-Disease," by Dr. Thomas R. Pooley, of New York, was read by title.

The following gentlemen were elected to membership: Dr. Edward B. Dench, of New York; Dr. William Cowen, of New York; Dr. John L. Adams, of New York; Dr. Edward Fridenberg, of New York; Dr. W. H. Wilmer, of Washington, D. C.

The officers elected for the ensuing year are: President, Dr. Gorham Bacon, of New York; Vice-President, Dr. Arthur Mathewson, of New York; Secretary and Treasurer, Dr. J. J. B. Vermyne, of New Bedford, Mass.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-ninth Annual Meeting, held July 19 and 20, 1893, at New London, Conn.

Dr. George C. Harlan, of Philadelphia, presided.

Dr. Charles A. Oliver, of Philadelphia, read a paper entitled "The Relation of the Patellar Tendon-reflex to some of the Ocular Reflexes found in General Paralysis of the Insane."

In some of the cases in the second stage of the disease, especially when the patellar tendon-reflexes were unequally exaggerated, there appeared to be an irregular and unequal spastic contraction of the two irides, causing irregularities in pin-point pupil-forms. In a few cases, especially in the third stage, in which the patellar tendon-reflexes were unequally diminished, the pupil-size, though small, and its shape, though somewhat irregular, seemed to be but little acted upon by any powerful mydriatic.

In many cases, especially in comparatively young subjects in the third stage, in which the patellar tendon-reflexes were unequally diminished, there appeared to be an unequal paralytic condition of the two irides; the pupillary dilatation manifesting itself at times, though not as a rule, in the eye with the greater amount of objective optic-nerve degeneration and retinal change.

In a few cases (especially in men beyond middle life) in the third stage in which the patellar reflexes were markedly diminished and ataxia was quite pronounced, there were marked temporary asymmetries of pupillary form, one often being quite small and irregular for several examinations, while its fellow was large and ovoid or oval.

In quite a number of cases, especially in the advanced stages of the disease (although seen in a number of cases in their earliest stages) in which the patellar tendon-reflexes were unequally exaggerated or diminished, there was a failure of the irides to respond to even major degrees of light-stimulus; this being true not only for those subjects exhibiting a true spastic myosis, but more especially in those instances in which, with partial dilatation of the pupil, mydriatics failed to act.

In many instances, especially in the older cases in which the patellar tendon-reflexes were, as a rule, unequally diminished or even lost, there was not only failure of iris-response to the strongest light-stimulus carefully thrown upon the retina, but when obtainable the irides seemed to fail to react to the various coarse and rough subjective and objective procedures necessary to evolve both separated and associated efforts for accommodation and associated efforts for convergence.

In some instances in which ciliary muscle innervation could be satisfactorily obtained, both the spastic excitation and the paralytic condition, at times found by subjective reading-tests and objective study with the retinoscope, seemed to be in direct ratio with the patellar tendon-reflexes and the iridic changes.

In quite a number of cases in which there was marked inequality of the pupils, with more or less want of reaction of the irides to light-stimulus, the patellar tendon-reflex on the side of the larger pupil seemed to be the more greatly diminished. In a number of instances, especially during the very earlist stages of the disease, when the patellar tendon-reflexes were beginning to lessen to unequal degrees, there often appeared momentary secondary ataxic dilatation of the pupil during exposure to strong light-stimulation.

In many cases, especially during the second stage, when the patellar tendon-reflexes began to become irregular and inconstant, pupillary inequalities, as expressive of unequal iris-innervation and action, became more and more constant.

Dr. Oliver also presented the "Clinical History of a Case of Spindle-celled Sarcoma of the Choroid, with a Study of the Microscopic Condition of the Growth."

The patient was a man, thirty-four years old, who five years before had suddenly noticed that objects situated to the right became dimmed when he attempted to look at them with the left eye. This condition gradually involved the whole field of vision, until in a little more than three years the eye became blind.

A tumor of the choroid was discovered after two years. There was a history of syphilis, but specific treatment had no effect upon the growth, and a diagnosis of sarcoma was made, and operation urged but not accepted. The growth attained a large size and became quite vascular. The eyeball was finally removed, perfect recovery ensuing. Microscopic examination showed the growth to be a spindle-celled sarcoma.

Dr. Emil Gruening, of New York, read a paper on "Sarcoma of the Choroid." He reported the case of a woman, thirty years old, who, with impairment of sight in the right eye, presented a pushing forward of the

retina in the mascular region. Sarcoma was diagnosticated and the eye was removed. Examination showed the growth to be a spindle-celled sarcoma.

DR. GRUENING also read a paper on "Sarcoma of the Eyelid." He reported the case of a man, twenty-three years old, who for five years presented a swelling upon the lower lid of the right eye, which bled freely and irregularly. It was operated on, but soon recurred. The skin covering the mass was freely movable. A small portion was removed and found to be sarcomatous. The tumor, with the entire thickness of the lid, was then removed and the lid restored by a plastic operation.

DR. H. KNAPP reported two cases of traumatic sarcoma of the lid, both terminating fatally.

DR. GEORGE C. HARLAN, of Philadelphia, read a paper entitled "Tumor of the Iris, probably Tuberculous." He reported the case of a male child that, at the age of two and a half years, presented defective vision upon the right side, with photophobia and lachrymation. There was some conjunctivitis, but no chemosis. There was a small posterior synechia. A number of small, yellowish-white, rounded nodules were visible at the periphery of the iris. These increased rapidly in size, and additional ones formed. The deposit increased rapidly, and soon filled the upper outer third of the anterior chamber, and completely covered the pupil. Intense photophobia of the sound eye developed, and the diseased eye was enucleated. After the operation the condition of the child rapidly improved. Microscopic examination indicated that the lesion was probably tuberculous, although bacteriologic examinations yielded negative results.

DR. B. ALEXANDER RANDALL, of Philadelphia, read a paper entitled "Reflections upon a Disastrous Case of Ophthalmia Neonatorum." He pointed out that occasionally the most careful precautions may fail to prevent the disease or bring it to a successful termination. He referred to a case in which he could find no fault with the prophylactic or the therapeutic measures, yet both eyes were lost, and protested against too uncompromising claims as to the powers of medical measures, as such claims may be two-edged weapons that may be turned most seriously against their authors or other medical men who have really done all that human means could effect.

DR. B. L. MILLIKEN, of Cleveland, Ohio, detailed some "Clinical Notes on Some Refractive and Muscular Cases." Six cases were cited in which attempts were made to correct high degrees of astigmatism by the ordinary means, but without satisfactory results, while the ophthalmoscope furnished most excellent corrections.

Several cases were reported showing what could be accomplished with prisms in the correction of muscular insufficiencies, and the question was raised as to the advisability of wearing prisms at various angles for the purpose of correcting both a lateral and a vertical muscular insufficiency with the same glass. For instance, in a case of a lateral insufficiency of, say, ten, and a vertical insufficiency of ten, instead of making two prisms to correct, one at 90° and the other at 180°, place a 2° prism at 45° or 135°, right or left, as the case might be. The histories of several cases of this kind were given in which patients had worn the glasses thus with much benefit.

DR. SAMUEL THEOBALD, of Baltimore, reported "Several Cases in Which the Vertical Diplopia Test Proved Untrustworthy." Four cases were reported in which the cover-test showed a high grade of exophoria, both in distant and in near vision, but in which the vertical diplopia test failed entirely to demonstrate the presence of the condition, in some of the cases even indicating esophoria. In one of these cases, and also in a case of esophoria, it was found that when, during the application of the vertical diplopia test, the cover-test also was employed, a squint would show itself in the excluded eye, which the vertical prism failed to bring out, and which would disappear upon the removal of the cover, though the vertical diplopia was still maintained, showing that the latter had no controlling influence over the action of the lateral muscles. Cases in which the vertical diplopia test proves untrustworthy are comparatively rare.

DR. SAMUEL THEOBALD, of Baltimore, read a paper entitled "An Additional Note in Reference to the Case of Useful Vision Maintained by Means of a Totally Dislocated Lens," heretofore reported to the Society.

The feature of interest was that a fragment of the dislocated lens, the capsule of which had ruptured two years before, fell through the pupil into the anterior chamber, where it remained for six months, resisting the solvent and opacifying action of the fluids of the eye so completely as to retain its transparency and its sharply cut angles. It closely resembled a bit of yellowish glass, and might easily have been mistaken for a foreign body. As its presence in the anterior chamber began to cause considerable irritation, the pupil was dilated and it was caused to fall again into the vitreous chamber, its return to the anterior chamber being prevented by the employment of a myotic. This was followed by the disappearance of the irritation, which has not since returned. The insolubility of the lens-fragment is the more remarkable in view of the fact that the patient was but twenty-two years old at the time the lens-capsule ruptured.

DR. CHAS. A. OLIVER, of Philadelphia, presented a series of wools for the ready detection of "color-blindness." The following modifications had been made in the Holmgren series:

Five individual tests are employed—pure green, pure red, rose, pure blue, and pure yellow. Loose und separate skeins of wool are employed. The colors are made of equal relative intensity. The value of the color used in each test skein is definitely expressed. The set is so constructed as to be used by any intelligent layman; so that passing color-changes can be preserved and permanently kept for future comparison; and so that written and verbal expressions of the character and the amount of the subnormal color-perception can be given.

The wools are made of one grade of manufacture, and dyed with vegetable material.

After several years' trial it has been found that all but the five principal test skeins, five pure match skeins, and eighteen confusion skeins of relative equal value to the pure match skeins can be dispensed with.

DR. CHARLES STEDMAN BULL, of New York, read a paper on "Gouty Retinitis, Choro-retinitis, and Neuro-retinitis," based upon a study of the retinal changes found in over one hundred gouty patients. It was pointed out that the changes in the fundus are always

bilateral, though rarely symmetrical in the two eyes. The degeneration in the walls of the bloodvessels and in the retina cause marked impairment of central vision, little or no impairment of peripheral vision, and never end in blindness. The loss of central vision is always progressive up to a certain point, unless the cause of the disease is recognized early and immediately and properly handled. Improvement of vision after the disease is established cannot be expected. Hemorrhages into the retina are rare, except in the beginning of the disease. Their absence later is probably due to the fact that the strength of the vascular wall is increased by the deposit, though its elasticity is diminished. The most marked feature in the fundus is the development of the arterio-sclerosis and the phlebo-sclerosis. This is seen by the ophthalmoscope in the vessels of the retina, and the microscope shows that the degeneration exists as well in the vessels of the choroid and optic nerve.

Another almost equally pathognomonic symptom is the peculiar yellowish granular exudation in the retina, located by the ophthalmoscope around the posterior pole of the eye, and generally leaving the macula intact, and proved by the microscope to be mainly in the nerve-fiber layer, though found in all of the layers except that of the rods and cones. The changes in the optic-nerve fibers seem to be almost entirely intra-ocular, and cannot be traced for any great distance back of the eyeball.

Dr. Myles Standish, of Boston, read a paper on "Retinitis Punctata Albescens." It was stated that the majority of cases present themselves on account of some discomfort in the use of the eyes, and in the course of the examination the white, rounded, glistening spots are discovered in the retina. After a time the eye can again be used with comfort, but the spots do not disappear. The nature of the substance deposited is not known.

Dr. Lucien Howe, of Buffalo, presented a communication entitled "Removal of Hard Cataract by Suction." In order to obviate the difficulty occasionally experienced in completing the final act of extracting the lens, an instrument similar to a large dropping-tube is applied to the protruding lens, creating a partial vacuum, and thus exercising traction.

Dr. Frank W. Ring, of New York, exhibited an ocular mask of papier-maché, to be used for the protection of the eye after cataract-operations.

Dr. Edward Jackson, of Philadelphia, read a paper on "The Artificial Ripening of Cataract." He reported a series of cases treated by tapping the anterior chamber, drawing off the aqueous humor, and massage of the lens through the cornea.

The operation was followed by very little reaction, there being no iritis or posterior synechiæ in any case. In patients over fifty years of age the operation was followed by rapid increase in the opacity of the lens and early maturity of the cataract. In patients under thirty-five years of age no effect upon the existing lens opacity was produced.

It was concluded that this method of ripening cataract is more efficient than that of Foerster (iridectomy and massage); that it is almost entirely free from danger; that it is probably a better means of avoiding prolonged practical blindness than the extraction of the immature cataract.

Dr. Herman Knapp, of New York, reported "A Case of Traumatic Dislocation of the Iris Under the Unbroken Conjunctiva; the Eye Damaged but Preserved; Typical Sympathetic Ophthalmia in the Other Eye."

A male, forty-five years old, was struck upon the left eye by the head of a small pet dog with which he was playing. The eye became discolored, but not painful. On the inner side of the cornea, and 2 mm. from its margin, the conjunctiva was raised by a black mass, which proved to be the iris. The conjunctiva showed no wound or scar. The whole iris was found absent from its normal position. The lens was in place and transparent. There was no neuro-retinitis or isolated rupture of the choroid. Vision equalled 15/200. The right eye was free from any irritation. The patient was directed to bandage the injured eye lightly, and not to use the other eye, and to keep quiet. Everything did well until twenty-nine days after the accident, when symptoms of sympathetic inflammation appeared in the right eye. Under active treatment the attack subsided, but relapses occurred, and vision in the right eye was completely lost. In the left eye vision equals 2/200, and the displaced iris has shrunken to a flat blackish mass, scarcely raised above the conjunctiva.

Dr. E. E. Holt, of Portland, Me., read a paper entitled "Removal of Steel from the Vitreous with the Electro-magnet." He reported three cases in addition to six previously reported. In all, the piece of steel had entered through the anterior chamber, fracturing the lens. The conjunctiva was separated and an incision made through the sclerotic behind the equator of the eye, the knife in each instance striking the foreign body. The electro-magnet was then introduced and the steel removed. The lens was subsequently absorbed and good vision obtained in every case, notwithstanding the fact that in the third case there was pus in the anterior chamber when the case came under observation.

A permanent magnet for use in removing foreign bodies from the cornea was described by Dr. Walter B. Johnson, of Paterson, N. J. It consists of a bar of steel, cone-pointed and elongated at each end. It is charged by rotating it within the magnetic field of a generator. It will continue in full magnetic strength for a long time. It has served an excellent purpose on several occasions in removing small particles of steel from the cornea which had perforated and almost entered the anterior chamber.

Dr. Walter B. Johnson, of Paterson, N. J., read a paper entitled "Suppression of the Visual Image." He reported the case of a man, nineteen years old, who had been cross-eyed since the age of three years, and has never been able to discern any object with the left eye. The right eye was hypermetropic. With the left eye fingers could be seen at six inches. As the result of an accident, enucleation of the right eye became necessary. In a few days fingers could be seen with the left eye at a distance of three feet; examination showed a hypermetropia of 1.50 D. With careful practice and instruction vision rapidly improved, in two weeks reaching 20/15 with a correcting glass and Jaeger No. 1 at twelve inches. Examination three years after the loss of the eye showed that the improvement had continued.

Dr. George C. Harlan, of Philadelphia, reported a "Case of Congenital Cyst of the Orbit with Anophthalmus

in a Well-developed and Healthy Child Five Months Old." The left eye and appendages were perfectly normal. A tumor about the size of a small hen's egg filled the right orbit and projected considerably beyond it. The orbit was as large as an adult's, and the lids were distended to more than twice their normal size. The skin was movable and of natural appearance. The cilia were well developed. The lids were separated about 2 cm. The exposed conjunctiva was congested, but otherwise not much changed. There was no discharge. There was nothing to mark the position of the cornea. There was no movement and no pulsation in the tumor, which was incompressible.

As the tumor was growing and the deformity great, removal was decided upon. Incision through the conjunctiva gave exit to a quantity of clear, watery fluid. The cyst was simple, the outer portion being fibrous and tough and the inner delicate, semi-transparent, and bluish.

The child died twenty-four hours after the operation, apparently from exhaustion following upon shock.

A careful inspection of the orbit after death showed that there was no communication with the intra-cranial cavity. Nothing resembling an eye could be found in the extirpated cyst, though at the bottom of the sac there was an undefined mass of tissue.

The tumor was thought to represent the embryonic tissues of the eye, in a condition of exaggerated hydrophthalmus, or a fetal encysted coloboma, which by its early inception and enormous growth had prevented the evolution of the eye.

Dr. Samuel B. St. John, of Hartford, Conn., read a paper entitled "Restoration of the Upper Eyelid by Means of a Flap taken from the Cheek." He demonstrated a method applicable to cases in which the upper lid had been destroyed by disease or injury, or had been removed by operation. In making the flap, the incision commences about half an inch in front of the ear and runs forward below the lower lid about half an inch and continues until the side of the nose is reached. It is then carried downward until the flap is of sufficient width, then taken backward. The flap is next separated and secured by numerous stitches to the freshened surface above. The gap left is closed by separating the tissues of the cheek below the wound and sliding them upward.

Two cases were reported in which this plan had been employed with success.

The following were elected to membership:

Dr. F. E. Cheney, of Boston; Dr. J. E. Weeks, of New York; Dr. Charles H. Thomas, of Philadelphia; Dr. George Fiske, of Chicago; Dr. Wm. H. Wilmer, of Washington, D. C.; Dr. Edward Fridenberg, of New York; Dr. H. B. Chandler, of Boston; Dr. Wm. Cheatham, of Louisville.

The following were elected the officers for the ensuing year:

President, Dr. George C. Harlan, of Philadelphia; Vice-President, Dr. O. F. Wadsworth, of Boston; Secretary and Treasurer, Dr. Samuel B. St. John, of Hartford; Corresponding Secretary, Dr. J. S. Prout, of Brooklyn.

The Society adopted a by-law limiting the membership to one hundred and fifty.

NEWS ITEMS.

The State Medical Examining Board of Washington held its regular semi-annual meeting in Spokane, July 5, 1893. Thirty-one candidates were present and certificates were granted to eighteen, thirteen failing to obtain the required percentages. The Board decided to discontinue the practice of granting temporary licenses. This was considered necessary, as, in certain cases, unscrupulous persons obtained them and palmed them off as licenses issued after examination. The medical societies generally throughout the State also petitioned for their revocation. Hereafter a total average of 75 per cent. will be required of candidates. The next meeting will be held in Seattle the first Tuesday in January, 1894.

Section on Materia Medica and Pharmacology, Pan-American Medical Congress.—A Section on Materia Medica and Pharmacology has been organized under the Executive Presidency of Professor Joseph P. Remington, of Longport, N. J., with Professor F. G. Ryan, of Philadelphia, as English-speaking Secretary. This Section promises to be an important one. Delegates have been invited from all the pharmaceutic societies and colleges in all the Americas. Those contemplating attendance are invited to prepare papers on pharmaceutic topics, the titles of which should be sent at once to Professor Ryan.

Dr. J. Moore Campbell, a physician in active practice in the southern part of this city, died July 14, 1893, of enteric fever, in the forty-fourth year of his age. He was graduated from Jefferson Medical College in 1878, and was for several years chief clinical assistant in the department of gynecology of the College Hospital. Appropriate resolutions have been adopted by his graduating class organization.

The Vermont State Medical Society will hold its eightieth annual meeting at Rutland, October 12 and 13, 1893. Two prizes are offered for the first and second best papers on either "Peritonitis" or "Septicemia."

Pettenkoffer, of Munich, the distinguished hygienist, celebrated, on June 30th, the fiftieth anniversary of his graduation in medicine.

Books and Pamphlets Received.

Annual Address before the State Board of Health of Pennsylvania. By Samuel G. Dixon, M.D. Harrisburg: E. K. Meyers, State Printer, 1893.

Clinical Lectures on Abdominal Hernia. By William H. Bennett, F.R.C.S. London: Longmans, Green & Co., 1893.

Circular No. 34. Commonwealth of Pennsylvania. State Board of Health. The Treatment of the Apparently Drowned or Suffocated.

Circular No. 35. On the Prevention of Blindness.

Circular No. 36. Sanitary Protective Associations.

Circular No. 37. Emergency Hospitals.

Circular No. 38. On the Care of the Eyes. Dr. Benjamin Lee, Secretary, 1532 Pine Street, Philadelphia.

Twenty-first Annual Report of the City of Boston, for the Year 1892. Boston: Rockwell & Churchill, City Printers, 1893.

Acne, Comedo, and Acne Rosacea. By J. Abbott Cantrell, M.D. Reprinted from the College and Clinical Record, 1893.

The Diagnosis of Gastric Disorders. By Allen A. Jones, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1893.

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ORIGINAL ARTICLES.

SYMPHYSEOTOMY[1] IN NORTH AND SOUTH AMERICA, WITH REMARKS UPON ITS GROWTH IN EUROPE.

BY ROBERT P. HARRIS, A.M., M.D.,
OF PHILADELPHIA.

FOR 115 years after the introduction of Sigault's operation, in 1777, no one ever ventured to perform it in our Western Hemisphere; and it was not until the evidences in its favor were startling and beyond dispute that the initial step was taken, in Brooklyn, on September 30, 1892, by Professor Charles Jewett. This trial was quickly followed by others, and 4 operations were performed in the following month in the United States. In November the operation was performed in Rio Janeiro, Brazil; and in December, in Montreal, Canada. In the United States, Brazil, and Canada, 29 women have been operated upon in 9 months, divided as follows: In the United States, 25; Brazil, 2; and Canada, 2. In our own country the cases have been distributed as follows: In Philadelphia, 8; New York, 7; Brooklyn, 2; Cincinnati, 2; and 1 each in Baltimore; Paris, Illinois; Springfield, Illinois; Pittsburg; Portland, Oregon; and Boston. Rio Janeiro has a credit of 2 cases, and Montreal, Canada, has the same, all of the women and children having been saved. Dr. Anna E. Broomall, of Philadelphia, has operated upon 3 women; Dr. Barton Cooke Hirst, of the same city, upon 2; Dr. Egbert H. Grandin, of New York, upon 2; and Dr. Rodriguez dos Santos, of Rio Janeiro, upon 2.

Four women of the 25 operated upon in the United States have died, and 6 children have been lost, 3 of the latter having been still-born. Twenty-two children were born alive. Three of these died: 1 in 24 hours, from long head-pressure; 1 on the third day from meningeal hemorrhage; and 1 in 17 hours from injuries received in attempts to deliver.

Cases IX, XIII, XV, and XXIV, died. Case IX was in labor 25 hours, had a pulse of 150 when operated upon, and died of exhaustion in 17 hours. Case XIII died after 12 days, of septic peritonitis, believed to have been entirely puerperal. Case XV died in 72 hours of double pneumonia, which was believed to have arisen from exposure in riding to the Maternity on a cold, rainy day. Case XXIV died on the eleventh day from sepsis, having its origin in the symphysis. The woman was a 12-para, and was three days in labor before going to the hospital. The case closely resembled the twentieth of Dr. Pinard, of Paris, which was the first in his hands to prove fatal.

The Brazilian symphyseotomies were the work of one well known as an obstetric writer in South America. One operation was performed upon November 11, 1892, and the other on February 13, 1893. The subjects were young Brazilian primiparæ, aged respectively nineteen and twenty-one years, who had contracted pelves, but to what extent the letter of the operator to me does not state. In each case the vertex presented, and delivery was accomplished by the forceps, the child being a male. The mothers made good recoveries, had no subsequent disabilities, and they with their sons were alive and well on June 15, 1893, when Dr. dos Santos wrote, one child being then seven, and the other four months old.

Symphyseotomy may be said to have had three periods in its existence: (1) from 1777 to 1858 inclusive, after which there was no operation during seven years; (2) from 1865 to 1886; and (3) from 1886 to the present time. What most concerns us is the third period, in which the technique of the operation has been perfected; the number of operations vastly increased; and the mortality, under antiseptic management, largely diminished. As an evidence of its spread and of the growing confidence in which it is held, it is only necessary to state that there were twelve operations in Naples in 1891, and none in any other locality; that in 1892 there were more operations in Paris than in Naples; and that the average per month in all countries collectively, during the past eighteen months, has been more than twelve. Judging from the records of the first six months of the current year I am led to believe that there may be as many as two hundred women operated upon throughout the year; or more than will be delivered by the Conservative and Porro-Cesarean sections together. The Porro-Cesarean operation has been adopted by twenty-one countries in a period of sixteen years; while, already, that of pubic section, in a year and and a half, has been tested in eleven countries. This sudden advance into popularity has been thought a *wild* one by many careful men, and there

[1] This mode of spelling is in deference to the wishes of Dr. Harris.

will, no doubt, be a reaction in time; but the method has a certain degree of merit, and the true measurement of it, as well as its legitimate death-rate, will in time be ascertained. Its mortality, except in Naples, has been much too high since January, 1892, and the proportion of children lost will make many obstetric surgeons cautious about adopting it in given cases. The death-rate at the present time is fully 12 per cent. for the women, and from 18 to 20 per cent. for the children. It has, besides, the serious objection that many primiparæ delivered through its intermediation by the forceps have extensive lacerations of the vagina, vulva, and perineum, to be repaired. At one time, about three out of four women (1866–1885) were allowed to deliver themselves; but since January, 1886, a large majority of children have been extracted by the forceps or by version. The infantile mortality under both methods has been about the same, as nine were lost out of fifty, when only about one out of four was forcibly delivered, or 18 per cent. There were, however, at the same period, ten women lost out of fifty, instead of 6, as the present rate reads.

Compared with the Conservative Cesarean operations of the best European maternities, we find that symphyseotomy has a greater mortality, both for mothers and children, and the difference is very marked as to the latter. If a hundred Cesarean operations are performed in good season, and particularly if entered upon a few days before the period of gestation has been completed, there should be a hundred children delivered fully alive, if in this condition when the celiotomy is commenced, except in the cases in which the Esmarch elastic tube has been applied around the cervix, when asphyxia of the fetus may be looked for. Under the Porro-Cesarean operation, the fetal loss has been twenty-one per cent. in 443 delivered, and the deaths in 1890 reached one-fourth, and in 1891, one-third, *due mainly to delay* and to the class of cases chosen to be operated on; although in these two years, eighty-one women were saved out of ninety-five. The women lost were fourteen, against twenty-eight children.

So far, then, as the children are concerned, the highest mortality has been under the Porro Cesarean section; the second, under antiseptic symphyseotomy; and the lowest, under the Conservative Cesarean operation as performed in Leipzig, Dresden, and Vienna. That the Porro cases may also be so managed as to have but little fetal loss, is shown by the records of the Krankenhaus, of Vienna, and some of the noted Maternities of Germany, where cases are rarely operated upon *in extremis*.

Symphyseotomy, to be performed in the interest of the fetus, ought not to be selected when the pelvis has a *very* short conjugate, as the head may prove to be too large in proportion to admit of a safe delivery. There is a temptation to combine induced labor, symphyseotomy, and version in cases in which the conjugata vera is below two and three-fourths inches, and some children have done exceptionally well under this management; but it is to be remembered that premature infants are difficult to raise, and that rhachitic mothers, as a rule, are neither wise nor wealthy. It is safer to direct our obstetricians not to be too venturesome, and to remember that, as a rule, the fetus in our country is nearly a pound heavier on the average than the fetus in Europe, where the minimum conjugate has been put down at sixty-seven millimeters (two and five-eighths inches). In one woman operated upon in this city the conjugata vera was exactly two and three-fourths inches; but the fetus, being a male weighing eight pounds two ounces, made a very narrow escape from death by asphyxia. Neither should this method of delivery be selected in a case such as presented itself recently in Philadelphia, in which a rhachitic woman was in labor two or three weeks before maturity, and in which the funis could be felt through the membranes in advance of the head. The anxiety of the parents for a living child here settled the question in favor of the Cesarean section, by means of which the fetus, whose pulse was also indicative of an extra risk, was saved. Having seen this rhachitic dwarf in her labor, I can testify to the interest felt in the question at issue, as the conjugata vera was two and three-fourths inches, and the fetus was believed to be small, which it proved to be.

It is a mistake to attempt to substitute symphyseotomy for the Cesarean section, on the ground that the former is the less dangerous to the woman. We must distinguish between the relative possibilities of the two operations, and their general results. The Cesarean operations of Leipzig, Dresden, Vienna, and Glasgow (under Cameron), as far as they have come to me, show that it is possible to save one hundred and thirty-two out of one hundred and forty-two women, giving a mortality of 7 per cent. Prof. Adolphe Pinard, of Paris, saved nineteen out of twenty women upon whom he had performed symphyseotomy. Italy, since January, 1886, has lost two women and five children under forty-six symphyseotomies; but no other country has been able to save anything like this proportion. Years of experience and misfortune have enabled her to do this, and to set such a hopeful example for imitation. But we must base our hopes of success upon much lower figures, and, upon a general record, which in the last seven and one-half years, in eleven countries, including Italy, gives, out of two hundred

and five cases, twenty-five maternal and thirty-seven infantile deaths.

The subosseous operation of Naples, which originated in Spain in 1780, and was reintroduced many years later by Galbiati, of Naples, is the one which has usually been performed in this country; cutting from within outward, and from below upward, in preference to the direct incision of Sigault, as still practised by Pinard and others of France. The knife of Galbiati has been remodelled, and now presents a longer body to the blade, and a shorter curved extremity, the whole edge being made to conform to the postero-inferior curve of the symphysis, as it is found in the majority of deformed pelves. Should this joint be three inches deep, instead of an inch and a half, as it is sometimes fonnd, the operator will be obliged to suit his instruments to the case. We believe that in this country it is better to preserve the tissues in front of the symphysis; and that we should aim to avoid the bloodvessels behind and in front of it, knowing that wounding them may lead to death by sepsis, as has happened in Paris and in Philadelphia. As Naples, and not Paris, has been the great center of success, we prefer to follow what Morisani teaches, after an abundant experience covering twenty-seven years. France has much to learn yet; as, since the revival of the operation, five women and thirteen children have been lost as a result of the first thirty-five pubic sections directly made; and this record includes the first eight successes of Pinard.

RENAL NEOPLASMS, WITH REPORT OF TWO CASES OF NEPHRECTOMY.[1]

By WILLIAM MACKIE, A.M., M.D.,
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Neoplasms, as they occur in the kidney, have been classified either histogenetically or histologically. Paul[1] adopts the former method, and divides them into those of congenital and adult origin. Those of congenital origin include sarcomata and dermoid tumors, and those of adult origin, cysts, sarcomata, adenomata, and carcinomata. In proof that sarcoma is of congenital origin he cites the case of a seven months' fetus in which the kidneys weighed twelve ounces, and the medullary portion of each was made up of nodules of a white new-growth, and the cortex was mottled with the same, yet there remained from twenty to thirty times the normal amount of renal tissue. These nodules consisted mostly of round cells, but in many parts they arranged themselves as though attempting some higher evolution. This he prefers to call a round-celled sarcoma. He also refers to another case of an eight months' fetus, described by Osler as one of adeno-sarcoma, and confirmed by himself. Cohnheim classes the sarcomata in children amongst the teratomata, and so does Dohrn.[2] Histologically, the new growths are divided into benign and malignant, and the following is the classification given by Newman:

A. Benign: 1. Fibromata. 2. Lipomata. 3. Hematangiomata. 4. Adenomata. 5. Papillomata.

B. Malignant: 1. Carcinomata. 2. Lympho-adenomata. 3. Sarcomata.

A. Benign.—

1. *Fibromata.* These are of comparatively rare occurrence. Out of seventy-four nephrectomies tabulated by Newman, five were for fibromata. These tumors sometimes reach a great size. Thomas removed one originating from the capsule of the kidney weighing ten and a half pounds; and Bruntzel, one weighing twenty-seven and a half pounds. Both patients made a good recovery. These were simple fibromata. Billroth removed a fibro-myoma, weighing forty pounds, with a fatal result. Fibro-cystoma and fibro-lipoma have also been met with.

2. *Lipomata.* These are still more rare than the foregoing. Ebstein records a case in which one kidney consisted wholly of lipomatous tissue. Spencer Wells[3] removed two fibro-lipomata, one from either kidney, weighing sixteen and a half pounds and fourteen and a half pounds, respectively. With that originating from the left kidney was removed one calix and papilla. Mr. Eve, in preparing the specimens, gave it as his opinion that their origin was from the circumrenal connective tissue; hence these cannot be regarded as true tumors of the kidney.

3. *Hematangiomata.* These occur as small nodules situated in the cortex and usually do not exceed in size that of a bean, and do not call for operative interference.

4. *Adenomata.* These occur in two forms, the papillary and alveolar: the former originate in the medulla and consist of tubules and acini into which the papillæ project, and are lined with cylindrical epithelium; the latter originate in the cortex, and are formed of dilated tubules lined with epithelium similar to that found in the convoluted tubes. They rarely attain any great size. Czerny operated upon a child of eleven months, with a fatal result; Schönborn successfully in a child of two years; Albert, in a woman of forty-one, and the tumor was as large as a child's head; Weir,[4] in a man of thirty-five, the kidney weighing twenty-one ounces; and Keyes,[5] in a gentleman of forty-nine. In the last case almost all traces of normal renal tissue were destroyed and the kidney appeared to be composed of an enormous number of nodules separated by newly-formed connective tissue. In Weir's case the new-growth was separated from true renal tissue by a dis-

[1] Read before Wisconsin State Medical Society, May 4, 1893.

tinct capsule. Walter Edmunds[6] reported to the Pathological Society of London a similar case, in which a globular tumor, two and one-half inches in diameter, projected from the anterior surface of the kidney, and extended internally into one of the calices. It consisted of cysts of various sizes, lined by cubical and columnar epithelium, and was enclosed in a distinct capsule. The kidney-tissue was healthy. Edmunds agrees with Shattuck in the belief that such growths are due to inclusion of remnants of the Wolffian body, because of the existence of a distinct limiting capsule.

5. *Papillomata.* These grow from the mucous membrane of the pelvis, are identical in structure with those found in the bladder, and the principal symptom present is hematuria. Jones[7] records the case of a patient who, while walking, was suddenly seized with faintness and an urgent desire to urinate. The fluid evacuated consisted of almost pure blood. Eighteen months after the first attack the kidney was explored, and a papilloma was found in the pelvis, and was removed. The hematuria recurred in four months, and eight months after the first operation nephrectomy was performed, and a papilloma, the size of a hen's egg, was found occupying the pelvis. Papillomata rarely give rise to any appreciable renal enlargement unless hydronephrosis is produced by a blocking of the ureter. Knowsley Thornton[8] met with such a case in a woman thirty-two years of age, who for twenty-nine years had suffered from discomfort and pain in the right renal region. On removal by abdominal nephrectomy he found a hydronephrotic kidney containing two pints of cloudy urine, several calculi, and the ureter blocked by a papilloma.

B. Malignant.—Primary malignant growths of the kidney are unilateral and form tumors of considerable size; the secondary are bilateral and do not give rise to any considerable enlargement of the organ.

1. *Carcinomata.* The medullary type is the most common, although all transitions from scirrhous to medullary are met with. It occurs as a nodular growth or a diffuse infiltration of the whole kidney. In the former, the shape of the kidney may be greatly changed, while in the latter its shape is retained. The origin is generally in the cortex, the parts first affected being the epithelium of the tubules; later the connective tissues become infiltrated. In the diffuse form are to be found many cavities of varying size, filled with broken-down tissue mixed with blood. This condition is likely to be misleading because of an indistinct sense of fluctuation being present. When the pelvis becomes involved, ulceration follows, and parts of the tumor separate and block the ureter. The capsule becomes thickened and very vascular. Adhesions to surrounding organs do not take place until late. When formed, the disease may extend to the overlying colon, into which the new-growth may even ulcerate. Secondary deposits form in distant organs, the retro-peritoneal glands, the liver, and the lungs. Rarely is the lower uninary tract involved in secondary infection. Dickinson explains this on the ground that infection takes place through the lymphatics, in which the flow from the kidneys is away from the pelvic organs.

2. *Lymphadenoma* occurs in the kidney as a part of a general disease; it is a metastasis, the primary growth being in the lympathic system, and consequently does not come within the sphere of the surgeon.

3. *Sarcomata.* Many of these are doubtless congenital. Of forty cases collected by Newman, thirty-three occurred under the tenth year, and of these thirty-three, twenty-six under the fifth year. Paul and Osler, as already referred to, have found them in the fetus. All varieties are found in the kidney. Their most frequent site of origin is in the cortex. At first the growth is encapsulated, but with cellular proliferation the capsule gives way, cell-elements find their way into the capillaries, and the disease becomes diffused throughout the entire organ. The richer the new-growth is in cellular elements the more rapid is this dissemination. Finally, the contents of the renal vein become infected and secondary deposits occur in the lungs.

The Symptoms are often very obscure. Renal symptoms may be wholly absent, the first thing to arrest attention being the discovery of a tumor in the lumbar region; or there may be anoxeria, with recurring attacks of vomitting or diarrhea, or even jaundice. Pain is not characteristic. It is not acute, but rather a feeling of discomfort, or of a dull, aching character, confined to the loin, seldom extending along the course of the ureter as in calculus, and uninfluenced by movement. Hematuria may be the first symptom and of such a degree as to produce syncope, as in a case recorded by Jones. It occurs when the growth has reached and ulcerated into the pelvis, and is hence absent in a great many instances. According to Roberts, it is absent in half the cases of malignant disease. When present it is continuous and independent of exertion, thus distinguishing it from the intermittent form present in renal calculus. It may also be absent for long periods of time.

When hematuria is the only symptom, the question presents itself: From which kidney does the hemorrhage originate? To decide this absolutely it is necessary to obtain samples of urine from either kidney. This has been accomplished in two ways: direct catheterization of the ureters, or compression of one ureter while the other remains

patent. Simon dilated the female urethra, and with the finger in the bladder he guided the catheter to the urethral opening. Pawlik accomplished the same without urethral dilatation by following certain landmarks in the anterior vaginal wall.

Newman introduced an electric lamp into the bladder, and with the aid of the eye introduced a specially devised catheter. Silbermann compressed one ureter with a rubber bulb filled with mercury; Tuchmann, by an instrument resembling a lithotrite, and Polk, by a catheter in the bladder and a finger in the rectum. Other devices have also been used. All have been reported successful, but none has come into general use, probably from the difficulties encountered in their employment.

The most important point, however, is the discovery of a tumor in the renal region. When of considerable size it can be easily made out by palpation, one hand being placed in front and the other in the lumbar region for counter-pressure. The tumor will be felt projecting forward and downward between the margin of the last rib and the crest of the ilium, smooth or irregular in outline, with rounded margins, and retaining more or less of the shape of the kidney; movable or not on deep inspiration, according to the presence or absence of adhesions, downward movement being most marked on the right side from the close relation of the organ to the liver. When of smaller size, Guyon's "renal ballottement" or Israel's method will be necessary. The former is practised with the patient recumbent. The operator stands on the side to be examined, and with the corresponding hand makes deliberate and gentle pressure at a point one inch below the junction of the tenth rib with its costal cartilage, and with the other hand pushed under the lumbar region, makes a series of gentle but short, regular, and quickly successive blows, by means of which the kidney is projected in a jerking manner toward the anterior abdominal wall. By the method of Israel,[9] the patient is placed in the lateral position with a pillow under the loin, the head-end of the table being elevated. Examination of the left kidney is made, with the patient on the right side, the operator standing upon the right side and placing the right hand upon the lumbar region, the left resting upon the anterior abdominal wall. During respiratory movements the finger-tips glide over the lower edge of the kidney. In the normally-attached kidney only the lower third, or at most the lower half of the organ can be palpated, and the rounded edge of the kidney can be felt and distinguished from the liver and spleen. These latter organs may be isolated and their edges lifted away from the kidney with the finger-tips. By means of this method Israel[10] diagnosticated in a boy, fourteen years of age, the existence of a normal kidney upon the one side and a sarcoma upon the other; in an emaciated woman with persistent hematuria, a calculus in the kidney was found and the diagnosis was confirmed by subsequent operation; and also a case of carcinoma in a patient twenty-one years of age, in which, with the finger pressed below the anterior junction of the eleventh and twelfth ribs, a flat prominence the size of a dime could be felt. In one month this had increased to the size of half a cherry; the kidney was exposed and exploratory puncture of the tumor proved it to be malignant. Nephrectomy was performed. The kidney was of normal size and microscopic examination confirmed the diagnosis, it being a carcinoma very rich in cells.

The retro-peritoneal location of the tumor is demonstrated by resonance on percussion anteriorly, from the interposition of the colon between the growth and the anterior abdominal wall. If the colon be empty, it will be felt as a rounded cord running over the front of the tumor. To exclude this, rectal insufflation with air should be used. If the colon is anterior, as it becomes distended, the percussion-sound will become resonant. When the tumor is of very large size the colon may be displaced inward; then there will be dulness instead of resonance, and a diagnosis must be reached by exclusion.

Diagnosis. — New-growths have to be distinguished from other forms of renal disease, affections of the peri-nephric tissue and supra-renal capsules, tumors of hepatic, splenic, or ovarian origin; tumors of the mesentery and pancreas, and fecal impaction. Before proceeding to an examination in any case it is advisable to administer a brisk cathartic. This will exclude one possible error of diagnosis, fecal impaction, and the empty condition of the intestine will render palpation more easy and accurate. Renal calculus is the most likely of renal affections to be confounded with new-growths. Both have the common symptom, hematuria. In calculus it is increased by exertion and diminished by rest. No such rule applies to neoplasms; it is often the reverse; the hematuria is "profuse, spontaneous, and recurrent" (Roberts), and independent of all external influences. Pain in calculus is more acute, boring, gnawing, or paroxysmal in character, and more diffuse, extending along the course of the ureter to the inner side of the thigh and testicle. Movement increases it. Pressure of the affected kidney is also more painful. In hydronephrotic and hydatid tumors fluctuation is more distinct than in the rapidly growing, malignant, and fibro-cystic varieties. Exploratory puncture will aid in the diagnosis. Careful examination and observation of the urine will exclude suppurative disease of the pelvis. From new-formations of the supra-renal capsule and peri-nephric tissue, or hyperplasia of the latter, a diagnosis is impossible. Horn and Bell and John-

ston[11] report three cases of adenoma of the supra-renal capsule; in one the kidney was not involved, but in the other two the growth had extended into the kidney. Knowsley Thornton, at the Clinical Society of London,[12] in 1890, reported the case of a woman, thirty-six years of age, with an abdominal tumor, which had been diagnosticated by Keith as an enlarged spleen, twelve months prior to its removal by abdominal section. After removal it was found to be a sarcoma of the supra-renal capsule, weighing twenty pounds, with a healthy kidney attached to its lower border.

Von Eiselberg[11] records a case of fibro-lipoma of the peri-nephric fat, the size of a child's head, firm and non-sensitive, removed along with the kidney. Harris[13] met with two cases in which hematuria was the only symptom. He explored the kidney, and found only thickening and adhesions of the peri-nephric tissue. The latter were broken up, and the hematuria disappeared.

Enlargements of hepatic and splenic origin are characterized by the absence of resonance anteriorly, from their close relation to the abdominal wall. On firm pressure the fingers can generally be pushed under the sharp margin of the liver, and in renal growths a space can be made out between the inner margin and the edge of the ribs. Movement with respiration has been considered diagnostic of new-growths in connection with the liver. This cannot be relied upon, because, on the right side at least, renal tumors of any size have this movement communicated to them through downward pressure of the liver. Splenic enlargements are more mobile, the greatest movement in renal tumors being in an antero-posterior direction (Hochsinger), and the notched margin of the organ can generally be made out. Renal tumors, when they extend inward to the middle line, and down toward the iliac fossa, have been most frequently mistaken for ovarian growths. Unless the bowel be adherent anteriorly, ovarian tumors are dull on percussion. Their intra-pelvic connection, or partial location within the pelvis, will exclude a renal origin, and resonance in the lumbar region is their characteristic.

Tumors of renal origin, however, at times possess all the diagnostic features of ovarian disease, as the following case, reported by Claus[14] at the German Congress of Surgeons, in 1885, illustrates:

"A woman, forty-six years of age, was healthy up to four years previously, when she noticed 'a rolling' in the abdomen, increased by deep inspiration and rapid movements. The abdomen grew larger, but for a considerable time there was no pain. A fluctuating tumor was felt in the middle of the abdomen. The urine was normal. The uterus was retroverted; only in front of this a pedicle could be felt. The diagnosis was monocular ovarian cyst. Celiotomy was performed, and the cyst was found to contain dark bloody fluid, and was connected with the kidney. Examination showed the tumor to be a fibroma, with few cells, but abundant fibers. It had developed between the medullary and cortical substance of the kidney, pushing the two apart. The cyst-wall was formed by the distended kidney-capsule."

Tumors of the pancreas and mesentery are retro-peritoneal. They are more centrally located, and their non-connection with the renal region can be shown by "Guyon's ballottement." In tumors of the pancreas, steatorrhea and the presence of sugar in the urine would aid in the diagnosis. Mesenteric tumors are very freely movable, as compared with renal tumors.

Failing to arrive at a satisfactory diagnosis, an exploratory incision for diagnostic purposes (which can be utilized as curative) can be resorted to. Either the lumbar or the transperitoneal route may be adopted. When the former, the kidney can be withdrawn in the loin, freely incised, examined by the finger from within and without, and again sutured without fear of any serious structural change. That such wounds of the kidney readily heal has been demonstrated experimentally by Schachner,[15] and confirmed by Morris[13] in the human subject, in the case of a man in whom the surgeon made an exploratory nephrectomy for calculus, and found none. The patient died a month later from another cause, and at the post-mortem the incision in the kidney was found represented by a linear scar extending through the renal cortex to the pelvis.

Hemorrhage after incision by the knife is rather profuse. To avoid this an opening may be made through the cortex with the Paquelin cautery. This is objectionable because it necessitates a temporary renal fistula when the conditions are such as not to demand a nephrectomy.

Treatment.—When the surgeon is reasonably satisfied of the existence of a new-growth, either benign or malignant, he is justified in making an exploratory incision, because it is impossible from the symptoms to differentiate the character, and as the majority are malignant, the element of success in the operative treatment depends upon early removal. In children under ten years of age the weight of opinion is against operative interference. Goodlee[16] believes that in the early stages it is justifiable, and the occurrence of secondary growths in only 28 per cent., as pointed out by Kühn,[17] would support this view. In 1885 Gross[18] reported a mortality of 57.57 per cent. in cases of sarcoma from the operation, recurrence in 42.58 per cent., and 35.71 per cent. well after thirty-one and a half months; and for carcinoma, 71.42 per cent. fatal.

Newman, in 1888, places the mortality for carcinoma at 56 per cent., for sarcoma at 53 per cent.

Fenger[19] cites eleven nephrectomies by Israel for malignant disease, with two deaths, a mortality of 18 per cent.; of the nine recoveries two died from relapse, one after six, and the other after three months. The other seven are now alive and well. Two of these may be considered as radical cures, as five and one-half years and four years, respectively, have elapsed since the operation—a percentage of 18 per cent. of radical cures. This is encouraging as to the result of early operative interference. The duration of life without operation is estimated at from two to two and one-half years. Of twelve cases of benign tumors tabulated by Newman, three died from the effects of the operation, a mortality of 25 per cent.

Nephrectomy may be performed by either the lumbar or the abdominal method.

1. *Lumbar nephrectomy.* The patient is placed on the side with the limbs well drawn up, and a firm, round pillow is placed under the loin so as to increase the space between the last rib and the crest of the ilium. Various incisions have been recommended, but that of König allows of most room. It commences about one inch below the margin of the last rib, is carried vertically downward along the outer border of the erector spinæ muscle to the crest of the ilium. If necessary to obtain sufficient room it is continued inward toward the umbilicus to the outer margin of the rectus and even through this to the middle line. The vertical part is completed first; then, after examination of the kidney, and if the needs of the case demand more space, the peritoneum is displaced forward and the muscles divided by a transverse incision. With broad and deep retractors the margins of the incision should be held well apart while the kidney is forced into the wound by pressure on the anterior abdominal wall. The perirenal fatty capsule, in the absence of inflammatory changes, can readily be detached by the index finger, the organ isolated and enucleated. The kidney is drawn well into the wound and forward toward the middle line. The pedicle is isolated and separate ligatures are passed around the vessels and ureter, and securely tied. As the vessels are being ligated all tension should be taken off the pedicle, which is divided close to the hilum, examined, and if deemed necessary, separate ligatures applied to the vessels of the stump. A large drainage tube is introduced into the cavity; if much oozing is present, it is preferable to pack with iodoform-gauze, and suture the incision. This König calls his retro-peritoneal lumbo-abdominal incision, in contradistinction to the retro-intraperitoneal lumbo-abdominal method. In the latter, when he desires to approach the tumor from the front, he divides the peritoneum in the line of the transverse incision.

2. *Abdominal nephrectomy*, or the trans-peritoneal method, when the incision is made through the anterior abdominal parietes. That with the incision in the linea semi-lunaris is known as Langenbeck's operation. The patient is prepared as for ordinary celiotomy, and after opening the peritoneal cavity both kidneys are examined manually. If one is found healthy then the other is removed through a vertical incision in the meso-colon over the renal region. With fingers introduced through this opening the kidney can be isolated as in the lumbar operation, the pedicle ligated and dropped back. Drainage can be effected through the lumbar region. The rent in the peritoneum is generally left unsutured, but it is safer to suture it, as Pugh[20] has recorded a case of death from obstruction due to strangulation of a loop of intestine in the peritoneal rent after extirpation of the left kidney for sarcoma.

Both operations have their advantages and disadvantages and their proper spheres of usefulness. To compare the subsequent mortality is no criterion, because it is the size of the tumor that necessitates the employment of the abdominal method. The mortality as given by Newman is 30.5 per cent. for the lumbar and 47.1 per cent. for the abdominal operation. The lumbar operation should be preferred in every case in which the size of the tumor will admit of its removal without undue force, or too extensive division of the abdominal wall. Advocates of the abdominal method lay great stress on being able to determine the exact condition of the other kidney. This can also be done in the other method by exposing the sound kidney through a lumbar incision on that side. It will not add to the danger of the operation, and the peritoneal cavity remains unopened.

I give the details of

A CASE OF SARCOMA OF THE KIDNEY; NEPHRECTOMY; RECURRENCE.

D. B., female, twenty-two years of age, was admitted into the Milwaukee Hospital August 23, 1890, with a diagnosis of renal tumor, probably a sarcoma, made by Dr. O'Malley and confirmed by Dr. Fox, in consultation. She gave the following history: For about two years she had suffered from dragging pain in the right lumbar region. This was marked by periods of paroxysmal exacerbation, accompanied by severe pain in the epigastrium, and vomiting. Such an attack continued for three or four days, during which time everything was rejected by the stomach. These attacks were attributed to disordered digestion and treated as such. They continued to recur and at shorter intervals. Five months before, while engaged in cleaning windows, she slipped and wrenched her right side. This directed attention to the lumbar region, where a tumor was discovered. This tumor had gradually increased

in size, and with the increase there were more frequent attacks of pain in the epigastric region, and accompanying vomiting. There is no history of urinary disturbance beyond increased frequency of micturition prior to menstruation, which has always been regular, but during the past six months of diminishing quantity.

The patient is anemic, but fairly nourished; she has lost in past years about eight pounds in weight. Inspection reveals a fulness in the right lumbar and umbilical regions, and on palpation, an oblong tumor, extending from the right renal region posteriorly to a point beyond the middle line and below the umbilicus, can be made out. The lower end of the tumor is rounded and smooth; the upper, under cover of the costal arches, is larger and nodular. The tumor is freely movable and can be separated from the liver on the right side. It gives an indistinct feeling of fluctuation. On percussion, dulness is found to extend from the middle line just below the umbilicus, backward to the lumbar region, continuous with the liver-dulness, laterally and posteriorly, separated from it anteriorly at a point midway between the middle line and the costal arch. Rectal insufflation of air diminished this area of dulness anteriorly, and thus demonstrated the retroperitoneal location of the tumor. For ten days prior to the operation the urine varied in quantity from 16 to 32 ounces daily, was of a specific gravity of 1020, contained a trace of albumin, and numerous small decolorized blood-corpuscles and bladder-epithelia.

The operation was performed September 3, 1890. On account of the large size and great mobility of the tumor, the abdomen was opened in the middle line. The left kidney was found to be apparently healthy, but enlarged, the ascending colon displaced inward, and the new-growth in contact with the abdominal wall anteriorly. The ascending colon was now dragged as far as possible toward the median line, a small slit made in the peritoneum to its outer side, and through this the tumor was gradually enucleated by the finger. During enucleation numerous large vessels in the perirenal fat required ligation. The ureter was first ligated low down and cut through. On ligating the vessels the patient suddenly ceased breathing, but rallied soon under artificial respiration and stimulants hypodermatically. After section, the renal vein was found to contain partially coagulated blood. The pedicle was dropped back, the rent in the peritoneum left unsutured, no drainage provided, and the abdomen closed. For the first three days following the operation the patient suffered from one of her usual attacks of colic, epigastric pain, vomiting, etc. Beyond this, recovery was uneventful.

The tumor as removed weighed eleven pounds, was covered throughout by large veins, firm and smooth at the lower pole, semi-fluctuating and nodular at the upper. On section, the upper part was found made up of cavities of varying size, filled with dark sanguineous fluid, or partially coagulated blood. No kidney-substance remained. The lower or solid part contained considerable kidney-substance, and, in the center, a fatty tumor undergoing degeneration. Microscopic examination showed it to be a round-celled sarcoma.

Subsequently the patient considered herself well for about six months, when she had an attack of influenza. Persistent cough followed this, and later her old attacks of colic reappeared. She was readmitted into the hospital July 1, 1891, when examination revealed a recurrence of the disease in the pedicle; also a small nodule of the same character at the lower angle of the abdominal incision, and numerous crepitant râles throughout the whole chest. She died September 1, 1891. At the necropsy the condition as stated was found, and in both lungs multiple and disseminated secondary growths in all stages of degeneration. The left kidney was one-third larger than normal; the other organs were healthy.

PAPILLOMA OF THE RIGHT KIDNEY; NEPHRECTOMY.

A. S. (first seen in consultation with Dr. Lang, November 28, 1892), twenty-six years of age, the mother of two children, the youngest one and a half years old, dates her trouble back to her last pregnancy. During the period of gestation she had occasional uncomfortable sensations in the right lumbar region. After her confinement these disappeared, only to recur early in the summer of 1891. In August, 1892, she first detected, under the right costal margin, a tumor, which was diagnosticated by Dr. Lang as a floating kidney. As the kidney was not very movable, he directed that a snug bandage should be used. This gave temporary relief. Still the tumor steadily increased, and became more movable. About the same time, and two days prior to her menstrual period, she had an attack somewhat resembling renal colic, with hematuria. These attacks have recurred regularly at this time since. In the interval urine is always free from blood. The patient is certain that there is no variation in the size of the tumor, or in the discharge of urine, during these attacks. Menstruation is regular. The woman was always healthy. One brother died of sarcoma of the thigh.

The patient was very anemic, having had a very severe attack of hematuria November 28, 1892, the urine appearing as if pure blood, and being of a deep smoky tinge. Examination of the abdomen showed a tumor to the right of the middle line and on a level with the umbilicus. It was freely movable in an antero-posterior direction. In size it was three times as large as a normal kidney, thickened from before backward; the pelvis and both poles could be made out. On December 1st she was admitted into the Milwaukee Hospital, when it was found that rest in bed had no influence on the character of the urine. On the 4th, she began to menstruate, after which there was less blood in the urine. The daily average of urine voided for nine days was 43 ounces, the maximum being 56 ounces, and the minimum 36. The probable diagnosis was sarcoma.

Operation was undertaken December 10, 1892, under chloroform-anesthesia. The kidney was exposed by König's incision. Exploratory puncture with a hollow needle failed to reveal anything. The needle was followed by ignipuncture, with the Paque-

lin cautery, and digital exploration of the interior of the kidney. The exploring finger detected soft, broken-down tissue, surrounded by an apparently firm wall. This opening was tamponed with iodoform-gauze, an additional forward transverse incision made in the soft parts, and the kidney removed. The incision was closed by deep sutures of catgut and superficial ones of silk. On the first day following the operation, 21 ounces of urine were voided; on the second, 32; on the third, 29; on the fourth, 35; and thereafter the quantity ranged from 32 to 36 ounces. Primary union of the incision occurred. The patient was kept in the recumbent position for four weeks to insure firm union of the incision, and thus guard against the occurrence of a ventral hernia. Rapid improvement of the general health followed and has continued.

The kidney weighed one pound and three-quarters. On splitting it open longitudinally a rounded tumor the size of a tennis ball was found occupying the lower half of the medullary portion, and extending into the pelvis as a soft papillomatous mass. The pelvis was filled with coagulated blood, and two smaller papillomata were found springing from its upper part. A great part of the tumor consisted of disintegrated coagulated blood, on washing which away, the papillomatous character of the new-growth could be demonstrated. The cortex of the kidney was healthy, but somewhat atrophied from pressure over the most prominent part of the tumor.

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H. Unverricht has succeeded Fraenkel in the editorial control of the *Centralblatt für klinische Medicin.*

PNEUMONIA AMONG THE INSANE.[1]

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From March 1 to April 25, 1893, we were afflicted with an epidemic of pneumonia following influenza, during which time there came under my personal observation and care 63 cases of pneumonia, all among the female insane and their nurses.

I should deem myself culpable did I not take this opportunity of placing before the medical profession a summary from the records of these cases, many of which were typical and need no special mention, while a few others were so obscure and misleading as to symptoms that the disease—while suspected by reason of the already large number stricken—could not be diagnosticated by any objective symptoms present, and it was left for the autopsy to establish the diagnosis. The hope that a summary of 63 cases of pneumonia may not be entirely devoid of interest to the profession at large, constitutes my apology for this paper.

A peculiar phenomenon in relation to this epidemic is the fact that for the first three weeks it was confined exclusively to the female wing of the building, not a single case of influenza appearing in the male wards during that time. While the disease was at its height among the females, the male side of the house was enjoying its usual good health, and when the disease finally did gain access thereto there were comparatively few cases, with not more than eight cases of pneumonia. The fact that this institution is all under one roof; that the male and female departments are exact counterparts, of similar structure, heated and ventilated in precisely the same manner, must also be borne in mind.

The etiology of pneumonia is at present an all-absorbing and disputed question, though the theory of a specific origin is becoming almost generally accepted. The pathologic investigations and experiments conducted during the past two years seem to indicate that we must give up our previously-conceived ideas as to causation, accept the pneumonia-coccus of Fraenkel, and class pneumonia among the acute infectious diseases.

While in the light of recent pathologic researches I am prepared to accept this theory, the question constantly forcing itself upon my mind is: Is it not possible and probable that we may have a specific and a non-specific form of this disease? It would seem to be without doubt, from my recent experience, that the epidemic form of the disease is of specific origin, yet I cannot at present bring myself to believe that every case of sporadic pneumonia

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1 Throughout this article reference is made entirely to croupous pneumonia.

met with in ordinary practice is due to a specific organism and is infectious.

We have Asiatic cholera, and no one doubts for a moment its specific and infectious nature. We also have cholera morbus, or cholera nostras, a disease so identical with the first named, that in severe cases the microscope is a necessary adjunct to a differential diagnosis; yet, except it be during an epidemic of Asiatic cholera, no one pretends to confound the two. Why, then, may we not have two forms of pneumonia, identical in clinical manifestations, yet widely divergent as to cause?

Again, pneumonia is distinctly a disease in which one attack predisposes to another, and one individual may have any number of attacks, while in most all other acute infectious diseases of specific origin, one attack usually grants immunity from a second. The epidemic form of the disease would point strongly toward an acceptance of the theory of specific origin without any further question, but pneumonia is seldom epidemic in character, and when so, is usually more malignant and therefore more fatal than in those cases that we term sporadic, and it is so probably by reason of a specific organism. In these latter cases may not the pneumonia-cocci found in the sputa be rather a sequence of the inflammatory process than the cause? While the recent experiments of Kitasato, Behring, and the Klemperers seem to support most strongly the theory of specific origin, and they show apparently that they have granted immunity from the disease by the injection into the blood of pneumotoxin, yet in two cases about to be related in which there was undoubted pneumonia, and which made a good recovery—the lungs becoming clear and the patients resuming their work at the end of two weeks in one case and of three weeks in the other—they became reinfected, and both cases died within three days after the second infection. Yet, according to our pathologists, these cases should have been proof against reinfection for at least six weeks. However, whether pneumonia is or is not always of specific origin, the question still remains to be definitely determined, and there is no doubt in my mind but that there are more individual causes of pneumonia than are or ever will be known to medical science.

The weather of February was cold and raw, while that of March was clear and unusually mild, though with cold winds. If atmospheric or telluric conditions play any part in the causation of pneumonia, the rather sudden change in our climate about the first of March may have been an important factor, for it was just at this time that influenza made its appearance. Yet, if so, how can we account for the fact that for so long it was confined exclusively to the female wing? This is suggestive that the cause may be looked for in some defective sanitary condition of that side of the house, though so far as is known at present the plumbing, system of sewage-disposal, and general sanitary condition of the house were never better. If we may still consider atmospheric conditions as a cause, our system of ventilation—that of drawing in air from the outside and forcing it through the wards to an exit in the roof—must be taken into consideration, and also in this connection, the overcrowded condition of the hospital. It would be interesting to know why all of these cases were preceded by influenza, and why there should have been 63 cases of pneumonia among the females and but 8 among the males. Does the presence of this catarrhal affection render individuals more susceptible to infection—the inflamed mucous membrane with its altered secretion becoming a culture-medium for the pneumonia-cocci, the development of pneumonia depending upon individual predisposition, aided, perhaps, by certain atmospheric conditions with which as yet we are not familiar?

Whatever may be the cause, we have to deal with the fact that on or about March 1, 1893, influenza of a most severe type made its appearance in the hospital, and made no distinction in its ravages between the sane and the insane. Among the patients and nurses in the female department there were 176 cases of influenza, followed in 63 cases, or nearly 36 per cent., by pneumonia.

As a matter of convenience, I have grouped the cases in four classes, as follows:

Class I, typical cases, of which there were 24; Class II, cases in which the usual premonitory symptoms were absent, of which there were 33; Class III, cases in which there were no objective symptoms, of which there were 4; Class IV, cases in which the physical signs were present, with no special disturbance of temperature, pulse, or respiration, of which there were 2.

CLASS. I.—In every case the patient suffered from influenza, complaining of intense boneache, headache, backache, creeping chills, and coryza. The temperature ranged from 100° to 102°, and the pulse from 90 to 120. The acute symptoms subsided on about the third day and the patients felt much better—so much better, in fact, that in the morning many left their beds against my advice—when toward evening or late in the evening, they were again seized with a severe chill lasting from five to fifteen minutes, the temperature rising to 104° or 105°, the pulse to 120, and they complained of a sharp, stabbing pain in the chest. The respirations were accelerated, and there was a cough, short, hacking, and suppressed, with very little expectoration of a frothy, tenacious mucus, which in a few cases was blood-tinged. On the second or third day the sputa became "rusty-colored," the physical

signs developed, and the patients presented the characteristic pneumonic appearance, with flushed and anxious countenance, temperature 102° or 103° in the morning, and from 103° to 105° in the evening; pulse from 100 to 110 in the morning, and from 120 to 130 in the evening; respirations from 40 to 60 and shallow; great restlessness and sleeplessness; anorexia, constipation, thirst, and coated tongue. The pain in the chest in most cases disappeared on about the fourth day, while in others it persisted throughout the entire illness and with such severity that it became necessary to use hypodermatics of morphin for its relief. In these 24 cases, the crisis occurred on the sixth day in 3; on the seventh day in 10; on the eighth day in 4; on the tenth day in 2; and 5 died on or about the ninth day of the disease at an average age of sixty and three-fifths years, the youngest being forty-six and the oldest seventy-four. The average age of the nineteen recoveries was forty-five. Of these cases the right lower lobe was affected in 9; the left lower lobe in 6; both lower lobes in 2; the entire right lobe in 2; the entire left lobe in 1; the left apex in 2; the right apex in 2.

One case in particular deserves more than passing notice: On the fifth day of the disease one of the nurses, whose left lower lobe was affected and whose symptoms were all favorable, was seized with an urgent desire to defecate while the nurse in attendance was busy with another patient. She therefore disobeyed orders, and getting out of bed to use the commode, was taken with a violent chill. Her temperature, which had been 102°, rose to 105°, and in a few hours she complained of intense pain in her right side. On the following day the physical signs showed an extension of the inflammatory process to the right lower lobe, while the left was resolving. The expectoration became prune-juice in color, and on the morning of the third day thereafter, her temperature was 105°, pulse 160, respirations 65, with extreme dyspnea, cyanosis, delirium, picking at the bedclothes—in fact, symptoms of approaching death. Nitro-glycerin and strychnin were administered hypodermatically, and brandy and aromatic spirit of ammonia internally, with the effect of lowering the pulse to 150. Sponging with equal parts of alcohol and cold water reduced the temperature to 103° (sponging was resorted to whenever the temperature reached 104°), and oxygen gas was given for five minutes every half-hour. These methods were kept up for two days and nights, during which time her pulse continued at 150 and respirations at 60, when the crisis occurred, the temperature fell to normal, the pulse to 96, with a general subsidence of the alarming symptoms. However, at the end of two days her temperature again rose to 102° and her pulse to 120. Examination revealed an extensive effusion in the right pleural cavity which at the present writing (May 6th) is not wholly absorbed, and the patient, while extremely weak, is gradually regaining her strength.

Class II.—As previously indicated, the usual premonitory symptoms of pneumonia were absent, and with the exception that in many there was also no pain, they were identical with those of Class I.

All suffered with influenza, but it was not until the fifth day that the physical signs of pneumonia developed, respirations became accelerated, and the sputa blood-tinged. There was no initiatory chill followed by a sudden rise in temperature; the pulse continued at from 100 to 120; except in a few cases no pain was complained of; the tongue, though coated with a white fur, was moist and the expectoration previously to the fifth day was bronchitic in character. Of these 33 cases, 5 were under thirty, 18 over fifty, and 10 over sixty years of age. Six died, of whom 2 were over seventy, 1 was fifty-one, and 2 were epileptics at twenty-seven and twenty-eight years of age. The average age at death was forty-nine and a half years.

Class III.—The four cases of this class were patients in the last stage of dementia, and were in an extremely adynamic condition owing to their want of exercise and long confinement. Their lack of vitality rendered them easy victims to the disease, and it is hardly to be wondered that their symptoms were not pronounced, and that they succumbed to the disease. But for the fact that others in practically the same mental and physical condition contracted pneumonia and presented the usual symptoms, these would not be mentioned. I am frank to admit that had these cases come under my observation during a season of health, it would never have occurred to me to suspect pneumonia, for there were absolutely no objective symptoms, and if influenza developed previously to the pneumonia no one ever knew it. The patients simply did not feel well, and so stayed in bed. In no case was the pulse over 100, or the temperature over 102°, but in all the pulse was small, weak, and compressible. There was no cough, no expectoration, no pain, no acceleration of respiration, no dyspnea, no cyanosis. Exploration of the chest gave a practically negative result, and the physical signs were so obscure that a positive diagnosis of pneumonia could not be made. It was merely suspected, and the autopsy confirmed the suspicion. The inability to obtain clear and unmistakable physical signs in these cases may be attributed to their slow manner of breathing, for in counting the respirations the movement of the chest-walls was almost imperceptible.

Niemeyer, in his *Text-book of Practical Medicine*, vol. i, page 179, says: "In aged persons or subjects of depraved constitution . . . . many have no characteristic sputa; nor do they complain

either of dyspnea or pain . . . . the physician having been deceived by external appearances, which really bear greater resemblance to typhus than to pneumonia of vigorous adults, and having neglected to make a physical exploration of the chest."

To me these cases were interesting and instructive, and I am now convinced that many of the aged and feeble dements who die from no apparent cause except a gradual failure of the vital powers may die instead from asthenic pneumonia.

These four cases were aged respectively fifty, fifty-one, fifty-two, and sixty-two.

CLASS IV.—These two cases were peculiar and interesting from the fact that the temperature ranged from 97° to 99°; the pulse from 70 to 80; respirations from 16 to 24. In both, a small portion of the right lower lobe was affected; both, it may be well to say, were nurses, one of whom suffers from an organic lesion of the heart. The characteristic pneumonic sputa and pain were present, lasting about three days. Yet, when these patients were considered well enough to leave their beds, on assuming the upright position the pulse ran up to 120, and the feeling of nervous exhaustion and prostration was extreme. They made a slow recovery and were among the last to have again the feeling of well-being. I am unable to account for the clinical phenomena presented by these two cases, except it be on account of the small area of lung involved. Yet we know that often in such cases the severity of the symptoms is out of all proportion to the amount of lung-tissue involved.

Of the two cases alluded to previously who became reinfected, little need be said. One was a case of senile dementia, aged seventy-four, who was one of the first to contract pneumonia. From the first attack she apparently made a good recovery, and was about the ward helping with the work. Three weeks later she again developed the disease, and from the beginning her symptoms were extremely grave and pronounced. She died on the third day. The second case was that of a colored woman, aged fifty-one, who had been admitted to the hospital a short time previously, suffering from acute mania. As she recovered from her period of excitement she contracted pneumonia and recovered by lysis—the only case of recovery, strange to say, which did not terminate by crisis. She was apparently well for two weeks, when she again contracted pneumonia and died on the third day of the disease.

Complications. The complications in the whole number of cases were comparatively few, though not unimportant. An exhausting diarrhea requiring treatment was present in three cases; jaundice appeared in one; pericarditis in two; pleurisy developed in two-thirds of the cases, and meningitis was entirely absent. In no case was delirium a marked symptom.

Sequelæ. About one-half of these cases made an uninterrupted recovery. The remainder were left in an extremely nervous, weak, and prostrated condition, from which they recovered slowly. In several otitis media developed, and in a few others symptoms of heart-failure occurred when they attempted to sit up in bed; symptoms of nervous prostration were severe in all.

Mortality. When we take into consideration the fact that fifty-five of these patients were afflicted with the various forms of insanity; that a few, owing to their delusions, were difficult to manage, and (owing to the number of nurses sick) could not be constantly watched, it is surprising that the death-rate was not higher.

Of the 15 deaths, 11 were cases of senile or terminal dementia; 3 of epileptic dementia; 1 of recent acute mania. It will therefore be seen that death took place in those patients whose vitality was at a low ebb, and who, enfeebled by age, by epilepsy, by sickness, and by long confinement, were in no condition to withstand the ravages of a disease acknowledged by all authorities to be one of the most fatal of the acute diseases.

The ages at death in the 11 cases of senile or terminal dementia were as follows: 60, 46, 74, 50, 52, 70, 67, 62, 50, 73, 51. The average age was $59\frac{6}{11}$. In the 3 cases of epileptic dementia the ages were 27, 28, 65; of the cases of recovery from acute mania, 51.

SUMMARY.

Influenza	176 cases.
Pneumonia occurred in { patients, 55 / nurses, 8 }	63 cases, or 36 pr. ct.
Deaths from pneumonia (all patients)	15 cases, or 23.8 pr. ct.
Average age at death . . .	55 years.

Treatment. Since the days of Rasori, when pneumonia was treated by bloodletting and two-scruple doses of digitalis, and patients were bled daily until either their symptoms became more favorable or they died, we have steadily advanced; and as our knowledge of pathologic anatomy has become more exact, we have come to a more conservative and rational method of treating pneumonia.

The expectant plan of treatment now almost universally in vogue, since physicians have accepted the fact that pneumonia is an acute self-limiting disease, still has for its opponents those who hold that, in the beginning, antiphlogistic and depleting methods of treatment exert a favorable influence upon or abort the disease.

Whichever method is the more rational—and from personal experience I can testify to the greater

efficacy of the expectant plan—our text-books, while agreeing that the indications are to keep the temperature within bounds and to support the heart, are not altogether agreed as to the better way of accomplishing the desired result. Some recommend quinine in large doses at the beginning; others have their own favorite antipyretics, while, to support the heart, digitalis and alcohol have been extensively used.

Dr. Osler[1] says: "No certainty has as yet been reached as to the value of digitalis in the failing heart of fever. The practice is very general, but it is a drug to be used with caution in this condition." Niemeyer[2] says: "Digitalis has been extensively employed and with great justice in the treatment of pneumonia . . . . with a pulse of from 100 to 120 in frequence."

The physiologic action of digitalis is "to prolong diastole, increase the vigor of systole, and increase arterial tension." Again, to quote Niemeyer, page 174: "The small soft pulse is due, not to weakness of cardiac contractions, but to lack of blood in the left ventricle, which causes a deficit in the supply of the aortic system. The left ventricle is imperfectly filled because afflux of blood to it is obstructed."

Patients with pneumonia, except when an unusually large amount of lung-tissue is involved, die at the heart and undoubtedly because the heart is in a great measure deprived of its necessary rest and nutrition, and the heart-muscle itself is disorganized by the high temperature to which it is subjected for so long a time. It seems to me, therefore, that in the rapid pulse of pneumonia, great harm can be done by the administration of digitalis, for the heart, already weak from overwork, is made still more so by that drug. The effect of digitalis is to temporarily lower the pulse-rate *and increase the vigor of the contractions*, thereby really *increasing* instead of *diminishing* the work the heart has to do. The obstruction in the lungs is not removed, arterial tension is increased, and when the effects of the drug wear away the heart is left much weaker than before. I am indebted to Dr. Thomas P. Prout, pathologist to this hospital, for the statement that in 30 per cent. of his autopsies on the insane the heart was in a state of marked fatty degeneration. In this condition, so predisposing to heart failure, digitalis would certainly be an unsafe drug, and it is a condition which should always be borne in mind, even in the treatment of the sane. In my experience with this disease, nitro-glycerin in small doses, repeated often if necessary, has been more than a substitute for digitalis, and I have been more than pleased with its effect. In every case in which it was used the pulse-rate slightly diminished in frequency and arterial tension was lowered, thereby temporarily relieving some of the strain upon the heart and also relieving collateral hyperemia. Strychnin, as a nerve and cardiac tonic, in doses of from one-sixtieth to one-thirtieth of a grain, repeated every two hours and oftener if necessary, cannot be too highly extolled, and in my opinion alcoholic stimulants are indispensable.

My own cases, with two exceptions, were treated on the expectant plan. Jacket poultices of flaxseed meal, renewed as often as they lost their heat, were applied and covered with cotton batting. As an expectorant (or placebo), ammonium chlorid in brandy was given in small doses every two or three hours. Aconite and veratrum were also used at the beginning, but with no appreciable effect. Patients were confined to a diet of milk, eggs, and beef-tea, and the bowels were kept open by the use chiefly of warm-water enemata (glycerin suppositories were used in a few cases with negative results). In the few cases in which the temperature had a tendency to rise above 104°, sponging with equal parts of alcohol and cold water was resorted to with excellent results. No antipyretic medicines were used, except at the commencement of the influenza, when a few powders, containing five grains each of antipyrin and phenacetin, were given to relieve the distressing aching. Morphin hypodermatically in one-fourth grain doses was given unhesitatingly when necessary for the relief of pain, with no unfavorable result. From the fourth day the patients were given strychnin sulfate, from one-sixtieth to one-thirtieth of a grain, with two drams of brandy every three hours, and these two remedies were increased or diminished in amount and frequency, according to the indications. Caffein citrate in from three-grain to five-grain doses, was used in a sufficient number of cases to convince me that it is a remedy of little value in this disease. In severe cases, with flagging heart, aromatic spirit of ammonia, with brandy, was given in connection with the nitro-glycerin and strychnin. In two cases, both nurses, one of which has been related at length, oxygen gas was also used, with the effect of relieving the cyanosis and dyspnea and lessening the rapidity of the respirations while being inhaled, but it did not lower the pulse-rate except in one instance, and I should wish to give it a more extended trial before expressing an opinion as to its value. It certainly did some good, and it seems to be a rational means of treatment, but many opinions have been expressed both for and against its use.

The two exceptions to this plan of treatment spoken of were given at the beginning ten grains of calomel, followed in six hours by a saline. Both

[1] In his recent Practice of Medicine, page 531.
[2] In his Text-book of Practical Medicine, vol. i, p. 191.

cases died, but I do not by any means attribute their death to the initial treatment. I may also add that I have never seen any benefit from this method of treatment, and it does not seem reasonable to suppose that in any disease in which all the indications are to support the patient, exhausting measures, either at the beginning or at any other time, can abort the disease or be of any benefit to the patient.

RUPTURE OF THE URETHRA IN THE MALE.[1]

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RUPTURE of the urethra may be produced by causes both internal and external. Those internal may be mentioned as foreign bodies coming from the bladder, as calculi; or such bodies from the outside, as catheters, sounds, or other bodies introduced through the meatus. The external causes are chiefly, the falling astride of something, kicks or blows upon the perineum, or wounds inflicted by sharp instruments. Another cause may be a primary stricture in the urethra, with damming back of the urine, followed by distention of the canal above the point of stricture, with consequent ulceration and perforation. Some of these causes may rupture the urethra instantly, while others lead to it by the steps of ulceration and perforation.

The symptoms of rupture of the urethra are pain, inability to pass water through the meatus, dribbling of urine through the external wound, if such be present, and later, inflammation, swelling, and suppuration in the perineum. Either or all of these symptoms may be present in varying degrees. The location of the rupture and its extent modify the symptoms. For instance, if it occurs in the spongy portion of the canal, little or extravasation occurs; nor are any of the symptoms severe, for here the canal is surrounded by contractile and muscular tissues that offer resistance to extravasation. No symptom but pain may follow rupture confined to the prostatic portion. All such injuries in the membranous part of the canal, however, are usually followed by the more intense symptoms because of the cellular tissues that fill the perineum.

Having a patient in such a condition that the symptoms lead us to believe that his urethra is ruptured, the first course to pursue is to find out if the canal is continuous and open from the meatus to the bladder. Here it is that great care should be exercised. If the history shows that a foreign body has been introduced from without and lost, or that a non-traumatic obstruction has suddenly appeared, the exploring sound or catheter must be introduced very slowly, so as to detect the obstruction when it is felt, and not to push the body further toward the bladder. Occasionally the body may be felt by palpating the penis; the sound may then be dispensed with. If the body be encountered in the pendant portion, the penis should be grasped beyond the body, and with proper forceps the attempt at removal be made. In case this is not such an instrument as a hair-pin or a pig-tail, which slips in more easily than out, it is very probable that, with patience, it can be removed. When not successful, however, no delay should be allowed, but the operation of perineal section should be performed at once.

Again, a stricture may be met in the portion of the canal external to the rupture. If this be all, or part of the cause, it should, before proceeding, be freely broken up, either by divulsion or division. But, the exploring sound may pass with little or no obstruction into the bladder, in cases in which the rupture is slight, caused perhaps by a puncture, or by mal-instrumentation. This condition is the most favorable, and if here the urine flows freely by the meatus, it is quite proper to allow it to do so, and watch the case carefully for perineal symptoms. The cases that we more commonly meet with, however, are those in which the symptoms are present in their greatest intensity, when the exploring sound refuses to pass into the bladder, when there is evidence of severe laceration of the urethra, either from internal mal-instrumentation or external straddle-falls. When we meet with these cases we must not wait for anything, but proceed immediately to perform perineal section. Extravasation occurs so quickly, and is so disastrous in its effects and results, that delay means ulceration, suppuration, and absorption of poisonous urea and pus.

Perineal section means opening of the perineum without necessarily going any deeper. When the incision is carried into the urethra, it becomes an external perineal urethrotomy. In either case a perineal section is the first step, and whether or not the following steps convert this into an external perineal urethrotomy depends on the condition of the parts.

The operation of perineal section is performed as follows: Placing the patient upon the table in the lithotomy position, and having straps or assistants to hold the flexed legs firmly and widely apart, the perineum is scrubbed and shaved, and the patient fully anesthetized. I do not believe a sound in the urethra is of any service. Anyone with a knowledge of the anatomy of the parts will experience no difficulty, the only vessels of size to be avoided being the arteries of the bulb, and if the incision is carried down exactly in the raphé these will not be disturbed. The scrotum should be held up by an assistant, who is careful to keep the raphé line constant and steady. When extravasation has existed for any length of time, the knife will very soon

[1] Read before the Med. Soc. of the County of Rensselaer.

enter a cavity, from which urine, and perhaps pus, will gush. If this does not take place, the incision should be carried down, using director and retractors carefully placed, until the urethra is reached. This is recognized by its cord-like character, or by the bulging of the foreign body, if one be present. The urethra may then be incised, and the foreign body removed.

If the urethral rent be easily found, a second opening should not be made, and the foreign body should be coaxed along to the rent, and there removed. In any case the wound should now be thoroughly washed out with an antiseptic solution, preferably mercuric chlorid (1 : 2000 or 1 : 3000), and the cavity searched for foreign substances. A soft rubber or silk catheter should now be passed through the meatus into the bladder. This may be an easy matter if the rent is slight; but if the urethra is lacerated or torn across it becomes a very difficult procedure. The catheter should be passed in at the meatus until it appears in the perineal wound, when attempts should be made to guide its point into the bladder. Success may attend the procedure by passing one catheter from the wound into the bladder, and a second larger size from the meatus to the wound; then telescoping the smaller into the larger one, the former may be carefully drawn and pushed through the urethra from behind forward. At any rate, the opening into the bladder is there, and can be found by perseverance and patience. In case one tires before discovering this, it can be left until later, when granulations fill in around it and it can be readily seen. Attempts should be made daily, however, until it is found and a catheter introduced. The bladder should now be washed out with a borac acid solution.

As to the after-care, it is my practice to leave a soft catheter *in situ*, from meatus to bladder, for the first forty-eight hours, for by so doing the severed ends of the urethra become somewhat fixed and approximated in the wound. A peculiar affinity seems to exist between the severed ends of the urethra, and they will frequently adhere to each other with surprising rapidity. The perineal wound should be carefully attended to daily, packing with iodoform-gauze being preferable.

The catheter should be removed in forty-eight hours, boiled and reintroduced; this will now be done with much greater facility than before. After a few days or a week this can be dispensed with and the urine allowed to pass, pressure on the perineal wound assisting its escape by the proper channel. It is needless to add that we should look well after the constitutional symptoms of our patient, using antipyretics and supporting measures as indicated until fever subsides; even for some time afterward tonics are indicated, and should be judiciously employed. Urethral fever should also be guarded against, even in slight cases, as this in itself not infrequently leads to a fatal issue. Full doses of quinine will usually abort this.

As to the final result in these cases, much depends on the cause and extent of the trouble. If slight, there will probably be no trouble whatever. A sound should be passed at intervals to guard against cicatricial contractions, and, as a rule, complete recovery ensues. Occasionally the fistula refuses to heal, or delays a long time; but this is exceptional. In such a case I should advise slight curettings and firm pressure. We meet with cases, however, in which the extravasation and suppuration with absorption have been so extensive that the patient is in a very bad condition when first seen, and frequently succumbs quickly. It is always better to give a guarded diagnosis.

I shall briefly relate a few cases that I have encountered and which will be examples of the various causes and conditions already described.

Case I.—Aged thirty; admitted into the County Hospital, with the history of having fallen across some beams. When seen he was in a very bad condition, in fact, almost in a state of collapse. The perineum and scrotum were greatly distended and ecchymosed. Very little urine dribbled through the meatus, and the bladder rose high over the pubes. He was prepared for operation and anesthetized at once, and an incision made directly into a cavity from which urine gushed. A catheter was easily passed from the wound into the bladder, with partial relief. The catheter was left *in situ* and the urine was permitted to dribble through. The patient, however, sank rapidly and died on the following day.

Case II.—Aged about thirty; was admitted into the Troy Hospital, with the history of having received a pitchfork-stab in the "crotch," followed by swelling. He was in a bad condition, and it was impossible to pass a catheter, by the way of the meatus, into the bladder. Others had made the attempt before and left their results. Perineal section was performed at once, and the urethra was reached without difficulty, as it was easily recognized by its cord-like feeling. The soft parts had not broken down, but were very edematous. The urethra was opened in the line of incision and a catheter was passed into the bladder. Although everything was done for the man, he died.

Case III was seen in consultation at Cohoes. Three days previously the man had fallen astride some planks. Such symptoms soon followed as retention of urine, pain and swelling in the perineum, etc. Attempts to pass a catheter failed. The following day the scrotum and penis began to swell, and, continuing, soon reached an enormous size, with ecchymosis extending to the inside of the thighs. Punctures in the scrotum allowed gas and fluid to escape. Perineal section was performed on the fourth day after the injury, the incision soon reaching a cavity and showing the tissues of the perineum disintegrated. Some urine

escaped. It was with great difficulty that a catheter was passed into the bladder, and a large amount of urine evacuated. The urethra was found to be torn completely across, and the inner end lay free in the wound, entirely separated from its contiguous tissues. The bladder was washed out, and a catheter was left *in situ*. The condition of the patient had been bad from the beginning, the pulse small and weak, and the skin clammy. He rallied, however, and reaction became fully established. He finally recovered, but to show how disastrous extravasation is, abscesses finally developed in both groins, the scrotum sloughed so as to lay bare the testes, a slough occurred at the junction of the penis with the scrotum, and a second fistula appeared. At the present writing the man is improving rapidly, and urine is passing freely through the meatus with the fistula closing rapidly.

In the three cases just given the injury was of an external nature, causing the rupture; the following are examples in which an internal cause was present:

CASE IV, aged sixty-five, was admitted into the Troy Hospital with the history of having five days previously introduced a lead pencil into the urethra, which had slipped from the man's grasp. After a while, pain became so severe and micturition so difficult that he sought relief. When the sound was passed into the urethra it encountered the foreign body in the membranous part of the canal. It could not be grasped. Perineal section was performed at once, and the scalpel soon reached the side of the pencil, whose peripheral end lay in a suppurating cavity. It was removed and the cavity and bladder washed out. The pencil was five inches long, and incrusted on its inner end. Bleeding was profuse from the bladder, and this nothing seemed to control. The catheter was left *in situ*, but soon became blocked. The patient succumbed the following day. The necropsy revealed a perforation in the posterior wall of the bladder, produced presumably by the end of the pencil. The organ was filled with clotted blood.

CASE V, aged fifty years, was admitted into Troy Hospital, complaining of difficulty in urination, and the existence of a fistula in the perineum through which urine escaped. A sound was introduced and after passing a moderately tight stricture a calculus was encountered. This was removed with urethral forceps, and the reintroduction of the sound revealed the fact that the canal was blocked with débris which could not be entirely removed. With the object of both removing the débris and healing the fistula, perineal section was performed, and a spoonful or more of phosphatic débris was taken away. The bladder was free from stone, although chronic cystitis was present. After curetting the fistulous tract, the bladder was irrigated and the wound was packed. The catheter was left in place for a day or two; then, by applying a compress to his perineum the patient passed most of his urine per meatus. The fistula gradually and completely closed.

All of the foregoing cases required a perineal operation. We encounter cases, however, in which it is not necessary to do any operation, as the point of rupture may close quickly without symptoms. As already stated, if the rupture is in the spongy or prostatic portion, there is not, as a rule, any extravasation. This is illustrated by the following:

CASE VI.—This man introduced a hair-pin into his urethra to dilate a stricture; the hair-pin slipped in and disappeared. About a week later the ends of the pin appeared, one on each side of the meatus. He tied them together with thread to prevent them from slipping back. When I saw him I snipped off one end, and unhooked the other. No symptoms of rupture were present, although the body had made two openings through the urethral wall an inch and a half from the meatus.

CASE VII is a peculiar one because the urethra was ruptured by a foreign body in the rectum. The patient, aged about forty, about five day previously to my seeing him in consultation had swallowed an artificial tooth-plate. He was given proper diet and kept quiet for four days, when he was attacked with severe urethral hemorrhage. His attendant examined his rectum, found the tooth-plate, and with a little difficulty removed it. The hemorrhage from the urethra continued, no blood, however, escaping from or into the rectum. Neither did any find its way into the bladder, as the urine passed after the first instant was clear. We passed a large soft catheter, which controlled the bleeding. There was no extravasation. The catheter was left in place for forty-eight hours, although once in the interval it was expelled by the patient, with a return of the hemorrhage. Reintroduction of the catheter once more stopped this. The tooth-plate probably had punctured the urethra by one of its projecting points, making a valve-like slit, which prevented the blood from passing toward the rectum, and also preserved the parts from extravasation.

The prognosis as to life in rupture of the urethra depends, as we have seen in the foregoing cases, upon the condition of the patient at the time of the operation. If several days have elapsed since the injury, with little or no urine passing, and with extravasation, the chances are against recovery. On the other hand, with slight injury, some water passing, and with little or no extravasation, the patient should recover in every instance, as well as in those more severe cases that have been seen and operated upon within a few hours after the accident.

The causes of urethral rupture, therefore, may be internal, external, or through some other organ.

The symptoms are difficulty in urination or retention; pain; swelling in the perineum; hemorrhage; dribbling of urine through the external wound.

If the cause be a foreign body, it should be removed, by the meatus if possible.

If there is no swelling in the perineum, and if urine flows freely through the meatus, allow nature to take its course, watching closely for any further symptoms.

If swelling exists in the perineum, with evidence of extravasation, perineal section should be done at once.

Care must be taken to keep the wound and the bladder as aseptic as possible.

Supporting and antipyretic treatment should be vigorously employed.

The prognosis should be guarded.

Care should be given as regards the caliber of the urethra for several weeks afterward.

CLINICAL MEMORANDUM.

THE LOWEST LIMIT OF PELVIC CONTRACTION ADMITTING OF SYMPHYSIOTOMY.

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An impression prevails that symphysiotomy is the proper operative treatment for labor obstructed by a moderate degree of contraction in the pelvis, in which the other alternatives are the induction of premature labor and craniotomy. This view was expressed without contradiction at a recent meeting of a prominent medical society at which the operation was the sole topic of discussion. Increasing experience, however, demonstrates that symphysiotomy is to be depended upon in the case of a pelvis symmetrically contracted, that a few months ago would have been thought quite impassable for a living child, even though the symphysis were cut. Leopold has recently delivered in this way a woman with a pelvic conjugate of only 6 cm., and more than a month ago in the Philadelphia Hospital I delivered without difficulty a rhachitic dwarf, a primipara, 4½ feet high, whose conjugate was, I think, very little if at all over 65 mm. The diagonal was a scant 9 cm., but the conjugato-symphyseal angle was so increased that 2¼ cm. was, in my judgment, a sum scarcely sufficient for the subtraction. To be on the safe side I induced labor two weeks before term; then dilated the cervix, performed version after opening the symphysis, and extracted the child in a few minutes. It weighed 6 pounds, 4 ounces. The head-measurements were: Bi-temporal, 8 cm.; bi-parietal, 9 cm.; occipito-frontal, 11½ cm.; occipito-frontal circumference, 33½ cm. The woman had an absolutely afebrile convalescence and the child is thriving.

The combination of delivery before term and symphysiotomy will give us entire control over any grade of symmetrically contracted pelvis that we are likely to see in this country, and whenever possible the two should be combined. In a very large experience with the induction of labor from two to four weeks before term I have found the mortality for the children no greater than in delivery at full maturity, whereas the slight diminution in head-diameters and the compressibility make a vast difference in the ease of delivery. Another, and a very great advantage in the induction of labor when symphysiotomy is contemplated is the fact that a convenient hour can be selected by the operator for the delivery, and all preparations can be made for the appointed time, as in an abdominal section. The plan adopted in the case here reported, and always followed by me if practicable, was as follows: Early in the morning a bougie is inserted and an ounce of glycerin injected alongside of it. Twenty-four hours later the lower abdomen is cleaned and shaved. By this time, if the pelvis is so contracted that the head cannot enter the inlet, the cervix will be softened but scarcely at all dilated. The cervical canal is then dilated with three sizes of water-bags, the largest twice the size of the largest Barnes's bag, each left in for about an hour. This is most conviently done by an assistant. At about the time that the artificial dilatation is completed the operator arrives prepared to operate and deliver as soon as the patient is anesthetized, the vagina is disinfected, and the instruments are sterilized.

MEDICAL PROGRESS.

Nervous Disorders in Tuberculous Patients.—In a study of the nervous disorders of tuberculous patients, Weill (*Revue de Médecine*, 1893, No. 6, p. 450) has found that in about 40 per cent. of cases there exists profound hyperesthesia—muscular, articular, and osseous. This hyperesthesia, apart from spontaneous pain, may be distributed over the whole body, but always predominates upon one or the other side. It is generally situated upon the neck, the trunk, and the roots of the extremities. The opposite side of the body may be anesthetic or hyperesthetic. Often there is also concentric and regular limitation of the visual field, unilateral or bilateral. Rarely there is muscular weakness. Muscular hyperesthesia is the most constant, the first to appear, and the last to disappear. Once present, these nervous disorders attain their maximum intensity in from a few days to two months. Rarely do they persist longer than three months. They disappear slowly and progressively in the course of a few weeks. Occasionally, they disappear rapidly. These nervous disorders have no relation, either as to intensity or as to distribution, with the seat, extent, and gravity of the pulmonary lesion. They generally appear in the early months of the tuberculous process; but once present, they seem to pursue an independent course. They occur alike in benign and in grave forms of tuberculosis. Sometimes they pursue a course opposite to that of the pulmonary phenomena, exacerbating when these decline, and *vice versa*. In a large number of cases, however, the course of the two manifestations is parallel. An intimate relation exists between this syndrome of nervous symptoms and that form of pulmonary tuberculosis attended with erethism, spasmodic cough, attacks of oppression, vomiting, and palpitation. These symptoms, by their character, suggest the stigmata of hysteria. In none of the twenty cases studied, however, was there a history of neurotic heredity, of convulsive attack, or of mental peculiarity. The condition must be considered as a symptomatic hysteriform condition. The phenomena are thought not to depend upon the action of the bacillus of tuberculosis upon the nervous centers, nor upon microbic intoxication. They must be regarded as manifestations of a centripetal irritation, of which the point of departure is constituted by the sensitive nerves of the bronchi and lungs.

Successful Excision of Hydrencephalocele.—CHARLES H. MAYO (*Annals of Surgery*, vol. xviii, No. 1, p. 26) has reported the case of an infant, a year and a half old, who presented a spherical pulsatile tumor, of the size of a small orange, projecting centrally from the occipital region, and which had been present from birth. The prominence was so tender that anesthesia was required to permit of the examination. The crest of the tumor was white and glistening, and apparently very thin, with a few veins coursing over its surface. The sides were evidently much better protected. At the right base there was a considerable thickening, evidently connected in the past with the cranial contents through a lateral fissure from the central opening. Operation having been decided upon, two scalp flaps were dissected from the sides of the tumor, and the dura mater was freed to the bony opening, which led inward and slightly to the right, and probably communicated with the right ventricle. The sac was opened, and an ounce of apparently normal cerebro-spinal fluid escaped. The sac-wall was composed of dura mater, and near the base, spreading out thinly on the sides, was evident atrophied cerebral tissue. The neck of the mass was ligated with heavy catgut, the entire sac cut away, the tissues around the stump securely fixed over it by buried sutures, the two flaps sutured in apposition, and a dry dressing applied. During the application of the dressing the child vomited, and the increase of intra-cranial pressure caused a pronounced left-sided spasm, lasting several minutes. Five grains of calomel were administered, with rapid effect, and the child made an uneventful recovery. The child was dismissed at the end of two weeks, the wound firmly united, and with no appreciable pulsation at the seat of operation.

Convulsive Tic.—At a recent meeting of the New York Neurological Society, DR. J. F. TERRIBERRY presented a male, thirty-nine years old, who, eight or nine years before, had noticed slight twitching of the muscles about the left eye, which gradually became more marked and extended to the muscles of the cheek, so that in a short time all of the muscles of the left side of the face were involved in the spasm. The movements occurred in paroxysms, separated by intervals of an hour or two, and it was said that they took place during sleep. They were aggravated by talking and by emotional excitement. Careful examination failed to reveal any organic trouble, either central or peripheral, in the course of the seventh nerve that could act as a cause. There was, however, decided nasal obstruction on the left side, which was removed. Some errors of vision were also discovered and corrected. The spasm of the facial muscles, however, was in no way affected by the correction of these defects. The operation of stretching the facial nerve was advised, and was performed, the nerve being exposed by an incision behind the ear. A weak faradic current greatly facilitated finding the nerve. When located, it was picked up with a blunt hook and stretched, the force employed being from four to seven pounds. The immediate result of the operation was, as had been expected, complete paralysis of the muscles of the left side of the face. There was no effect upon the hearing, taste, or the palatine muscles, showing that the effects of the traction were not felt centrally. Subsequently, a gradual return of voluntary control of the facial muscles was noted, and this steadily increased. There was no return of the spasm after the operation.

Hemorrhagic Infarct of the Testicle.—ENGLISCH (*Wiener medicin. Blätter*, 1893, No. 23, p. 303) reports three cases of hemorrhagic infarct of the testicle, and refers to three others recorded in the literature. The condition is characterized by sudden swelling of the testicle, and in less degree of the epididymis, with the formation of a firm band in the course of the spermatic cord, without assignable cause; rapid inflammation of the scrotum; general prostration; nausea, vomiting, and sometimes symptoms suggestive of peritonitis; acute hydrocele of slight degree; distention and thrombosis of the veins; inflammatory extension to adjacent structures. The temperature remains elevated for two or three days. Anatomically, the veins are found distended with blood, while groups of lymphoid cells are present in the interstitial tissue, without inflammatory changes. Blood is extravasated between the seminiferous tubules, and there are deposits of pigment. The epithelium of the tubules is cloudy and fatty. In the further course of events the testicle undergoes atrophy. In most cases no cause for the condition can be determined, but from the youth of the patients, the thinness of the walls of the veins would seem to be a predisposing factor. An infective influence is not to be entirely excluded. The treatment consists at first in active antiphlogosis. If the symptoms fail to yield, skin, vaginal tunic, and testicle should be incised down to the body of Highmore, and the gangrenous tissues be permitted to be thrown off. Only in case of profuse suppuration should the testicle be entirely removed.

Foreign Body in the Ear for Twenty-one Years.—PRITCHARD (*Lancet*, No. 3641, p. 1383) has reported the case of a married woman suffering from acute follicular tonsillitis, which readily yielded to treatment. Interrogated as to whether she had had any ear-trouble previously, the woman stated that for a number of years she had suffered from neuralgic pain and a sensation of a foreign body in the auditory canal. It was recalled that during childhood the woman had placed a pea in the ear, which was not removed. The application of warm oil and syringing with warm water removed considerable wax and disclosed the presence of a dark, roundish body adhering to the posterior wall of the canal. Syringing failing to remove this body, a fine silver-wire snare was carefully passed beyond it and the body was dislodged and on examination proved to be an ordinary pea. It was considerably shrivelled and in part covered with epidermis.

A New Method of Auscultatory Percussion.—SMITH (*Medical Record*, June 24, 1893, p. 777) reports the employment of a new form of auscultatory percussion, by means of which he believes shades of differential dulness may sometimes be detected that would otherwise escape observation. The small extremity of the binaural stethoscope is held between the patient's teeth while the lips are closed around it and the nostrils are compressed by the fingers. The results obtained do not differ in kind from those obtained by percussion in the ordinary way, but the intensity is greater.

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SATURDAY, AUGUST 5, 1893.

THE DISORGANIZATION OF THE AMERICAN MEDICAL PROFESSION.

"Did you attend the meeting of the American Medical Association at Milwaukee?" was asked of a physician a few days ago. "O, no! I do not train with that sort of a crowd," was the unexpected reply. This attitude of mind was hopeless, and the suggested Dundreary proverb concerning the kind of a bird that "flocks all alone by himself," was useless.

But this attitude of mind is one that two bodies have to look to a bit. The medical profession, as a whole, will sooner or later give it a sharp answer, and, whether this answer be spontaneous or compelled, another somewhat important body, called "the body politic," will have a very decisive word to say about it.

The disease is evident; it is a rebellion of the members against the whole body; it is an exaggeration of individualism, a democracy so rampant that factionalism has become easier than union. We are, it is true, in the full-tide of political democracy, but we have not yet reached socialism or anarchy. We still abide politically in representative government and (at least since 1861) in the rule of the majority. But in medicine we seem to think no organization necessary, and that professional individualism, factionalism, or anarchy is our natural state. There is even a touch of pride in flocking by oneself or with a half-dozen like-minded self-flatterers.

Have we then no common duty, such a duty as can only be performed by the profession acting and speaking as a whole? If not, then of course there is no logical or valid answer to individualism. But to ask the question is to answer it with a ringing "Yes, we have such duties, and we are disloyal if we say we have not!"

But viewed simply as a professional matter, a little family affair with which, *pro tempore*, it may be admitted the lay world has no concern, what about this indifference to organization and this refusal of corporate duty? It is plainly a question of self *vs.* the medical profession; it is, frankly, nothing more than professional rebellion.

It is smiled over and talked about as an open secret that the formation of so many select and membership-limited societies of specialists has been motived by other reasons than dissatisfaction with the American Medical Association. It is said that they are not to be viewed as corporate protests against the "politics" and "the methods" of that or indeed of any possible general organization, but that they are attempts to divide the consultation practice of the country among the limited number of fortunate members. This may be untrue. It is not for us to decide, but the action certainly permits the suspicion to arise, and the way to allay it is not to continue the contemptuous indifference to, and utter neglect of, some common organization.

It may also be noted that there is no evil more evident, no evil more universally deplored by rational medicine than the evil of medical sectarianism. But what bouffe logic, to complain of the homeopathic, eclectic, or Kneipe crank and sectarian, while scorning general organization and manufacturing factions and special limited societies, even within the regular profession. So long as the profession does not shake itself together and present to the public the spectacle of a united body of men agreed upon all the essentials of medical practice, just so long will that profession not command the respect of the world, and just so long will it be unable to accomplish its proper and destined work. To-day we are powerless to cause medical schools to be conducted for the sake of medicine instead of for the sake of the proprietors and professors; we are powerless to crush the hideous "patent" and proprietary medicine business; powerless to get "medical" news-

papers conducted for medicine instead of for the advertiser; powerless to bring about the nationalization of health; powerless to prevent the needless and useless one-fourth of all deaths and the one-half or more of the sickness that is such an enormous tax on the commonwealth and crippler of all social energy. And why this powerlessness? Simply because of medical sectarianism, professional disorganization, and anarchy.

There are numberless reasons that might be brought against the individualist and his neglect of professional organization. Sooner or later the common sense, or the sense that should be common, of the mass of physicians will recognize the fact that there is or must be such a thing as professional interests and duties, and that members of the profession must be held to an acknowledgment of them. Then will there be a quick ending of the factionalist and egotist. In every civilized country of Europe there is such organization and accountability. Even barbarous Russia regulates and stigmatizes the trade in patent medicine that free and civilized America sends to her in shiploads!

It was the witty saying of a wise man that democracy is only making pi, and certainly medical democracy is the absurdest of pi-making. Professional self-interest and the public interest stare at us from every aspect of life and work. There is no intelligence or corporate strength in this disunion. It is our duty to unite and to encourage *esprit de corps* by organization. Factionalism is an *esprit de corpse*, if the bad pun may be pardoned, and professional rebellion must be stigmatized, if not punished.

Considered simply as the largest medical organization in the United States, the American Medical Association offers the most suitable and the most probable gravitational center to which must gather the subordinate elements and groups. If not to your liking, it is not very liable to become more so by your non-membership. Parties, whether political or medical, are not mended by letting them alone. In every large organization thousands of minor differences and individual preferences must be sacrificed. The need of some organization is so great that longer to delay it is vanity and selfishness and whimsicality. There is slowly arising a general medical consciousness—unseen or scorned by the politician and anarchist—a spirit of centralization, a recognition of the duty of unity, nay, of the self-interest of unity. It will be well to reckon with this spirit, because its rule is as inevitable as its coming. There must be an end of this "flocking all by oneself," this cliqueism, coterie-forming, and limitless pi-making. This attitude of everlasting criticism by the disgruntled is silly and pig-headed. An aroused profession must sweep it aside, or else an aroused public sentiment will sweep an unworthy profession aside. There is even now a plain intimation of such a public condemnation of us in the fact that preventive medicine—the coming greater part of all medicine—is willy-nilly being taken out of the hands of physicians, and is being cultivated by the non-medical scientist. If this shall in fact and completely come about, it will be our own fault, a plain case of *felo de se*.

The American medical profession has one pre-eminent and imperative duty before it, to which all other interests and duties must be sacrificed, and that is the duty to organize.

BUTTER.

A CIRCULAR, entitled "Nostrums for Butter-making," recently issued by the U. S. Department of Agriculture, gives an interesting account of attempts to deceive the public by the sale of preparations purporting to increase the yield of butter from a given amount of milk. The officers of the department express, naturally, some dissatisfaction at the readiness with which farmers have taken up with the fraud, not only because it must appear that the use of any such preparation is dishonest; but, with the information that has been liberally afforded by the bulletins of the department, any intelligent agriculturist can learn that no more butter-fat can be obtained from milk than exists in it. It appears from the circular that most of these preparations are arrant humbugs. One form, widely advertised under the name of "black pepsin," varies in composition, some samples consisting of common salt, annatto, and a little rennet, while others are mixtures of pepsin and sugar.

It is worthy of note that in the extended discussion of food-adulteration of late years, butter has not received much attention from sanitarians. Milk, alcoholic beverages, and baking powders have caused the outlay of much breath and printers' ink, but even the enormous development of the oleomargarin industry has been met by opposition from commercial rather than from sanitary interests. The ears of health officers have remained dull to farmers' recitals of the evils that attend the use of

substitute butter. It is true that most repressive enactments relating to this subject have either in the title or preamble assumed an intention to protect the public health, but this is merely a legislative way of putting things to avoid conflicts with court-decisions.

This indifference need not be a matter for alarm, for while oleomargarin is not a perfect substitute for butter, and may never entirely replace it, it is, as now manufactured, apparently not unwholesome, and, therefore, not an object of sanitary restriction.

A more serious matter is the skilful adulteration of genuine butter, by the use of some of the "nostrums" noted, or possibly by methods not yet known to the authorities. The result is the production of a commercial article containing an excess of water, sometimes over 40 per cent., while good butter will not contain over 10. Such an article is spongy, and becomes rancid readily. It is, of course, a great fraud on the consumer. Butter of this kind is often sold in Philadelphia, especially among the poorer population. Indeed, there seems to be an organized system for its manufacture and sale. It will, doubtless, be difficult to stop such a practice. The product cannot be considered unwholesome, except by an extreme construction of the term, and as water is a normal ingredient of commercial butter, the issue must be made on the percentage present. No legal standard of percentage exists in this State, and it might be very difficult to set one up in an individual case to the satisfaction of a jury. It is, however, of some interest to know that systematic frand is occurring frequently with regard to an extensive and important food-product.

If efforts are made to secure a general law against food adulteration at the next Legislature, it will be well for those interested to bear in mind that the substitution by oleomargarin is not the only fraud that is practised by the purveyor of butter, and to provide for a minimum percentage of permissible fat.

ON A CERTAIN LACK OF HUMOR IN PHYSICIANS.

Physicians may undoubtedly be pardoned for it, but they surely have a natural or acquired deficiency of the sense of humor. Their right to pardon comes from the tremendous seriousness of their daily work; they may not even smile at the unconscious jokes of their patients, except after they and their "guitars in their noses" have left the office. "It's awful to have the nerves, doctor," and it's awful likewise *not* to have 'em. Some years ago a medical humorist began the compilation of an encyclopedia of medical wit and humor and solicited contributions from all physicians. The contributions came in huge packages, but they were neither witty nor humorous —they were simply—not to be printed. The would-be author-editor never smiled afterward. It was a sad case of pseudo-cyesis.

Another proof of this thesis has lately come to our notice. Remarking, with much despondency of heart, that physicians as well as "the vulgar herd" like to handle secret proprietary remedies and believe in outrageous claims and certificates of impossible cures, a humorist spent considerable money in advertising in "reputable medical journals" a series of preparations, trade-marked and patented, of the most astonishing qualities and powers. Certificates from pompous magnates, with titles of surpassing length as tails to their names, were appended; and the whole affair was set forth with the customary effrontery in the remarkable scientific jargon of the professional advertisement-writer. The actual advertisements are before us as we write.

For the anti-vaccinationists and the aristocratic, "Jennerine" possessed a charm; it was of spontaneous production in a blooded cow of long pedigree, but for many generations had been carried through the human royal family of England, acquiring thereby great intensity and nobility. Transmission of the virus and inoculation could also be effected by telegraph "over many miles of wire."

Of "Pasteurine," the universal microbicide, the formula was published, though the name was trade-marked, and "other dealers are warned, etc." And this is the formula:

> Nitrogen, one volume.
> Carbonic acid gas, pure anhydrated, two volumes.
> Permanganate of potash, two parts by weight.
> Pure oxygen, without admixture, one volume.
> Pure carbon in crystalline form, one part by weight.

"Consumptine" was guaranteed a sure cure for consumption. As regards Croupine, the physician required especial teaching and drilling in its application, to prevent the digestion of the membrane of the patient's throat while being swallowed. Its price was $7.50 per ounce, "very reasonable in consideration of the results obtained." "Dyspepsine" and "Cancerine" were guaranteed of absolutely

unfailing power. "Ostrichine" enabled one to eat mince pie and railroad sandwiches with impunity. ("We raise our own ostriches.")

"Brainerine" needed only its name to recommend it. "Brains are scarce just now," says the advertisement, "and for this reason our supply, for a few years, will be limited. Physicians requiring this article for their personal needs or those of their patients, will please apply with subscription at once."

And now for the promised proof of professional lack of humor: To the address of the "Nineteenth Century Therapeutical Company," from every part of the United States, came thousands of serious letters from physicians—literally thousands—requesting samples, ordering supplies, and making inquiries as to the applicability of these remedies to ailments described in detail!

EDITORIAL COMMENTS.

The Supplying of Germ-free Milk.—It is one of the strange things that the first attempt to supply under scientific supervision a clean, pure milk, free from germs, is yet to be made. That a food so universally used, so necessary, and so easily becoming not only unhealthful, but the very carrier of multiform disease, should be left to the carelessness and cupidity of uneducated men, is a fact almost beyond belief. The cows and the men who milk them are almost always filthy, and are often diseased. At Hightstown, N. J., for example, eighteen cases of diphtheria were recently traced to one dairy, where a boy with the disease was employed to wash the milk-cans. The germs of typhoid fever, of scarlet fever, and of tuberculosis are, as is well known, carried in milk.

At Caldwell, N. J., important experiments are about to be made to prove that milk may be produced under conditions that will guarantee its purity. The experiments are to be carried out under the supervision of a medical commission, with which are associated chemists, bacteriologists, and veterinary surgeons. All requirements may be carried out by a farmer of ordinary intelligence, with medical and veterinary supervision. It is estimated that certified milk can be delivered for twelve cents a quart.

The plan outlined includes three general requirements:

1. That physicians give their practical support to an effort conducted by a commission selected from their own number, who shall endeavor to bring to the city a supply of milk, produced under such regulations that purity shall be assured.

2. That approved and trustworthy dairymen, possessing honor, financial ability, and dairy-facilities, shall be induced by reason of promised medical support and the increased price of their milk, to conduct their dairies, collect and handle their products, in conformity with a code of requirements made by the aforesaid medical commission, and imposed by them in due legal form.

The contract shall include the sureties for its fulfilment; the location and character of the land; the construction of buildings; the water-supply; the surroundings; the health and breed of the dairy-stock; the housing and care of the cows; the feeding; the collection and handling of the milk; its cooling and preparation for shipment; the bottling and transportation, together with the minor details of delivery.

3. That the commission shall carry on its work without pecuniary compensation. Its duties shall be: First, to establish correct clinical standards of purity for cows' milk. Second, to be responsible for a periodic and personal inspection of the dairy or dairies under its patronage. Third, to provide for bi-monthly expert examinations of the dairy stock by a competent and approved veterinarian. The milk produced shall be subjected to chemical analysis and to bacteriologic tests, made under the direction of the commission at such times as in its judgment are desirable.

The veterinary surgeon, chemist, and bacteriologist shall be selected by the commission, and when so requested, either periodically or otherwise, they shall render their reports in writing. The expense of all examinations should be defrayed by the dairyman, as he is the only party gaining a pecuniary advantage. These expert reports, although designed for certificates, may also be used for the information of the medical fraternity in the localities where the milk is sold.

After receiving these reports, the commission should send a certified copy of the same to the owner or agents of the dairy or dairies under its supervision. Duplicate printed copies, bearing the signatures of the experts and the names of the commission, should be issued by the dairymen, at such times as may be agreed upon, and the circulation should, for obvious reasons, be limited to physicians.

The milk thus produced should be known as certified milk; should be sealed in separate quart-containers, and bear the name of the producer, together with the date of milking. The milk, being designed especially for clinical purposes, should be subject to the following restrictions in its sale, namely, that when at any time the demand is greater than the supply, and the milk is required by a physician, either for infant-feeding or the diet of the sick, it should be agreed that the physician or his patient shall be a preferred purchaser.

The agreement required of dairymen entering into contract binds them to the conduct of dairies in conformity with specified requirements, including the costs of chemic and bacteriologic examinations; inspection at least bi-monthly; subjects the location of lands, the construction of buildings, the water-supply and surroundings to the supervision of the commission. It provides conditions for the selection of the dairy-stock, excluding from the herd used for producing certified milk "any animal bred through close consanguinity; any animal that was not, as a heifer, kept sterile during its first twenty-seven months; any phenomenal milker, unless glandular disease or tubercle has first been excluded by a competent observer." The housing and care of stock, feeding, collection and handling of milk, preparation for shipment, the bottling, transportation, and delivery are all governed by rules specified in the contract, the violation of which is subject to penalty.

The commission has freed itself from all chance of self-interest in any of the experiments to be made. Members thereof are forbidden to act as experts, or being in any way interested in the matter, other than for professional purposes.

Adaptation of Cow's Milk.—Soxhlet has recently issued a pamphlet entitled *The Chemical Differences Between Cow's Milk and Human Milk, and the Means of Equalizing Them.*" The author, although perhaps not known to many clinicians, is an eminent authority in analytic chemistry, and, as translations and abstracts of his

pamphlet are beginning to appear in the journals, it will be well to note that there are some errors in it. Soxhlet proposed to make cow's milk of the same dietetic value for infants as mother's milk, by adding half the volume of a 12.3 per cent. solution of milk-sugar. This gives, he states, a percentage of casein equal to that of human milk, while the milk-sugar equals nearly 10 per cent., the excess over that usually in human milk being intended to compensate for the reduction of fat by dilution. The author states, upon the authority of another investigator, that milk-sugar may replace fat in the proportion of 24 to 1. As a matter of fact, the figures given are erroneous. To obtain a solution containing 9.4 per cent. of milk-sugar it will be necessary to add a half-volume of a solution containing over 19 per cent.—a solution difficult to prepare. Soxhlet's formula will only give about 7.5 per cent. of sugar, while the fat will be reduced considerably. He further bases his formula upon the view that cow's milk is of constant composition, a view that is clearly untenable in the light of thousands of analyses now on record. The employment of cream for preparing imitation human milk is deprecated on the ground that there is no ready method of determining the amount of fat, a position which is also untenable, as rapid and accurate processes available to unskilled workers are now known. As an essay by so distinguished an authority will be likely to receive unquestioned acceptance by many, it seems necessary to note its defects.

The Etiology of Asiatic Cholera.—The doctrine of the specificity of the comma-bacillus in the etiology of cholera has been especially opposed by the Munich school. At first another organism (the bacillus neapolitanus of Emmerich and Buchner) was credited with being the causative factor. When the correctness of this claim was disproved, great importance was attached to local and individual conditions, the comma-bacillus being conceded only an incidental relation. Now that it is admitted that there can be no cholera without the comma-bacillus, the attempt is being made to prove that the symptoms are not dependent upon influences that are peculiar to the comma-bacillus. Emmerich and Tsuboi (*Münchener medicin. Wochenschr.*, Nos. 25 and 26, 1893) endeavor to demonstrate that the clinical picture of Asiatic cholera is the result of an intoxication by nitrites generated by the cholera-bacilli. We are quite willing to admit that nitrite-intoxication may be a factor in the production of the symptoms, but we are scarcely ready to believe that these are solely dependent upon this influence. We have not a little yet to learn concerning the etiology of cholera, but at this stage it would be exceedingly difficult to ignore, not to say disprove, the specific influence of the comma-bacillus, however complex this relation may be.

The Iowa State Board of Medical Examiners is determined to break up sham medical colleges and sham medical education if possible. No medical college will hereafter be recognized by the Board as in good standing that does not require as a condition of graduation "four graded courses of lectures of not less than six months each—no two of which said courses being in the same calendar year." Colleges not coming up to the minimum requirements (preliminary examinations, four years' study, attendance at quizzes, examinations, etc.) are notified that the Board certificates will not be granted to their graduates. The Eclectic College is making a fight against the ruling in the courts; but as an indirect result of the controversy it is found that it has no charter right to confer a degree, and that according to its charter it is only authorized to organize and teach "for pecuniary profit."

REVIEWS.

Saint Bartholomew's Hospital Reports. Edited by W. S. Church, M.D., and W. J. Walsham, F.R.C.S. Vol. XXVIII. With Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1891. By the Medical Registrar, J. A. Ormerod (Oxon.), F.R.C.P., and the Surgical Registrars, Anthony A. Bowlby, F.R.C.S., and C. B. Lockwood, F.R.C.S. Pp. 370. London: Smith, Elder & Co., 1892.

This report contains thirty papers, of varying degrees of interest, merit, and originality. We can only make reference to some of the more important matters. Mr. Howard Marsh points out the exceeding difficulty sometimes encountered in the differential diagnosis of new-growths and inflammatory enlargements of bone. Mr. Harrison Cripps, in speaking of hernia as a complication of abdominal incision, says that "One of the causes of this is allowing the patient to get up too soon without adequate support to the abdomen. All scar-tissue, in its earlier days, is comparatively soft, and will slowly yield to anything like constant pressure; on the other hand, after a while, it becomes of the firmest and least yielding structures in the body. A carefully made abdominal belt will be sufficient protection after the first few months; but for the first three months, if the incision has been of any length, it is most desirable that the patient should apply three or four turns of thin roller bandage, five inches wide, around the abdomen firmly, on rising in the morning. The patient should be enjoined to keep the recumbent posture as much as possible, and avoid any exercise that causes undue action of the abdominal muscles." Mr. Arthur Maude contributes a note on the application of Leiter's tubes to the precordium in the treatment of exophthalmic goiter. He uses a large-sized rectangular coil, at first for twenty or thirty minutes, morning and evening, the time of application being gradually increased until the coil is worn for some hours daily. Many months are necessary for anything like permanent improvement. Nephritis is a possible danger from the treatment, which should not be employed if albuminuria be present. In all cases the urine should be periodically examined. Dr. Andrew Haig makes the proposition that the contraction of the vessels in Raynaud's disease is a result of the presence of uric acid in the circulation. Dr. T. Clay Shawe argues that in certain cases of insanity the performance of trephinig may be a justifiable procedure, and reports an illustrative case. Dr. Vincent D. Harris records an analysis of forty-one cases of intra-thoracic growths in St. Bartholomew's Hospital, from 1882–91, and also the epitomized notes of nineteen cases of a similar kind in the City of London Hospital for Diseases of the Chest, Victoria Park, during ten

years. Mr. W. McAdam Eccles makes an interesting analysis of twenty-eight cases of intussusception. Nine cases of intestinal obstruction are treated of by Mr. F. W. Tuncliffe, to which are added some remarks by Mr. Bruce Clarke. Dr. J. A. Ormerod reports four cases of acute ascending paralysis. Mr. Arthur J. Hall reports a case of hepatic cirrhosis in a girl eleven years old. Mr. E. Cautley details a bacteriologic study of the etiology of croupous pneumonia. He raises the question whether the presence of microörganisms in the lung in pneumonia may not in most cases be regarded as a sequel, and concludes that if the disease is dependent upon the presence of microörganisms, no one single species is present in every case. Dr. G. G. Morrice calls attention to the occurrence of suppression of urine in the course of diphtheria. Mr. F. E. Batten reports three cases of "progressive muscular atrophy associated with loss of sensation to heat and cold," in one of which post-mortem examination disclosed the presence of a cavity occupying the central canal of the spinal cord. Dr. H. Lewis Jones contributes interesting notes from the Electrical Department, in which he considers the management of the apparatus and the treatment of the cases. Sir Dyce Duckworth and Dr. H. H. Tooth report two cases of general spastic rigidity of unusual type, in which the explanation is ventured of a primary meningitis, followed by inflammation of the cortex and subsequent sclerosis. The volume concludes with a descriptive list, specimens added to the museum during the year 1892, and statistical tables for the year 1891.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In two volumes. Illustrated. Philadelphia: W. B. Saunders, 1893.

The list of authors of this latest addition to coöperative medical literature is certainly a good one. In the two volumes will be contributions by J. S. Billings, Francis Delafield, R. H. Fitz, James W. Holland, E. G. Janeway, Henry M. Lyman, William Osler, William Pepper, W. Gilman Thompson, W. H. Welch, James T. Whittaker, James C. Wilson, and Horatio C. Wood; in addition to whom, the editor acknowledges the assistance of Dr. F. A. Packard.

The work is likely to be well received, its teachings being those of the advanced schools of the day. All of the articles are well written, though some are better than others, especially in the matter of treatment. In this respect, we confess to much disappointment in the article on "Influenza" by the editor. While caution is suggested in the use of antipyretic drugs, such use in many cases is not only condoned but even advised—very bad advice, no matter how eminent the adviser. The two formulæ given, one for a pill of quinine, opium, digitalis, squill, and licorice; the other for a solution of morphine, quinine, and strychnine in phosphoric acid, glycerin, and water, are excellent examples of a polypharmacy that, in this disease above all others, should be avoided. The value of strychnine, ammonium preparations, and the terebinthinates is recognized, but hardly sufficiently emphasized. Salicin and its derivatives, and sodium benzoate, probably the most useful of all drugs except strychnine, are not mentioned; neither is the importance of securing free diuresis. It is true that the experienced practitioner does not need to be urged to look after all the secretions, but the student who will use this text-book does. We must also differ from the author as to any danger of increasing catarrhal complications by "hydrotherapy." If, however, he means to say that the cold bath is unnecessary and would in many cases be dangerous by abstracting necessary heat, we heartily agree with him. Indeed, we believe that part of the evil results of the coal-tar products is due to their depression of temperature.

The article on "Typhoid Fever," also by the editor, is excellent throughout. It is indeed one of the best condensed studies of the subject in the English language. We might differ from the author as to the utility of silver nitrate or the period at which alcohol is to be used. The recommendation of hydrotherapy is judicious, but we regret to see antipyrin given in never so small dosage. We are glad to see turpentine intelligently recommended.

Among the best articles are those on "Mental and Nervous Diseases," by H. C. Wood; while Osler writes of "Diseases of the Brain, the Muscles, and the Nerves," in his own rare style of brief inclusiveness. Billings's article on "Hygiene" is all that it ought to be, and its prominence in a text-book of practice is a bit of brilliant editorial work.

Whittaker contributes a series of articles on various acute infectious and parasitic diseases, and Thompson treats of syphilis, malaria, diphtheria, cholera, yellow fever. Detailed review is impracticable, but the articles as a whole are good, and can be confidently referred to by student and practitioner.

A Text-book of Medicine for Students and Practitioners. By Dr. Adolf Strümpell. Second American Edition, Translated by permission from the Second and Third and Thoroughly Revised from the Sixth German Edition, by Herman F. Vickery, A.B., M.D., and Phillip Coombs Knapp, A.M., M.D., with Editorial Notes by Frederick C. Shattuck, A.M., M.D. With 100 illustrations. New York: D. Appleton & Co., 1893.

Concise, full, and accurate; permeated with knowledge both theoretic and practical, Strümpell's text-book has won for itself a place in the front rank; and the additions made by the American editors enhance its value for American students and practitioners. We can select but a few points for comment. Accepting the current theories of infection, the author is by no means blind to possibilities outside of the prevailing doctrine. Thus, in discussing the etiology of enteric fever, while attributing the origin of the disease in every instance to invasion by typhoid-bacilli, he upholds the view of multiplicity of means of conveyance; and admits that individual predisposition is likewise necessary to the development of the disease. Attention is directed to the frequency of inhalation-pneumonia among the complications of enteric fever; but the existence of a croupous pneumonia dependent upon the typhoid-poison is likewise recognized; and due prominence is given to cases of "pneumo-typhoid" in which the early symptoms suggest pneumonia rather than enteric fever.

The treatment by cool bathing is recommended. We are glad to see hydrotherapy likewise advised in scarlet fever. The use of hydrogen dioxid for the throat and nose is not mentioned; yet we have come to look upon it as an essential element in the treatment not only of scarlatina but of all other diseases presenting similar local conditions. At the present time we turn with some interest to the chapter upon Cholera. The author warmly advocates opium, not only in the preliminary diarrhea, but later. Injection of hot saline solutions into the veins, enemata of tannin, and other measures of the kind are merely mentioned without expression of opinion. In the diagnosis of digestive disorders the author attaches great importance to examination of the gastric contents. In the treatment of perityphlitis opium is advised, and surgical means are not advocated by the author unless there is evident abscess. The editor, however, takes a more advanced view as to timely operation in appendicitis. There is a succinct chapter on Biliary Cirrhosis, but little help could be obtained in a doubtful case from the remarks on diagnosis. Even with the editor's additions, the remarks on pancreatic disease are more unsatisfactory than the obscurity of the subject warrants. The section upon Nervous Diseases is one of the best and most complete presentations of the subject for the general practitioner. The specialist may note omissions and differ in part from the views advanced. As an evidence of careful clinical study, we are glad to see that in the article on Exophthalmic Goiter the occasional association of angina pectoris and of spontaneous gangrene is noted. "Insufficiency of convergence" is given due prominence among ocular signs.

To conclude, we can only speak of the work of the author and of the translators and editor in the highest terms, and congratulate the English-reading profession upon the appreciation thereof which has led to the issue of a new edition in English.

Alcoholism and its Treatment. By J. E. Usher, M.D., Fellow of the Royal Geographical Society of London; formerly Surgeon Supt. and Medical Officer of Health to the Queensland Government. New York: G. P. Putnam's Sons. London: Baillière, Tindall & Cox, 1892.

This little work is evidently an effort on the part of its author to fill a place long vacant on the shelf of the physician's library. He very aptly starts out by stating: "Generalizing has been indulged in by a host of observers, but in very few instances can we find evidence in detail of the manifold changes existing in chronically diseased conditions."

It is very plain that there has existed a pretty general failure to recognize inebriety as a disease whose etiology, development, pathology, and treatment are as worthy of and as imperatively demand the most studious and methodical observation and treatment as have been given to typhoid fever, croupous pneumonia, or diphtheria. This lack of attention by the neurologist, alienist, and general practitioner has left the medical library almost barren in practical literature upon alcoholism. That which is available suffers from the fault of either being too general to be useful or too highly theoretic and scientific to be of any practical value to the general practitioner. Thus an inviting loophole has been left open, through which have crept unprincipled "Quacks," "Charlatans," and "Pretenders," to prey upon a most unfortunately afflicted portion of humanity.

Dr. Usher has energetically reopened this field in a style of English that is most interesting and impressive, and gives some valuable suggestions to those who have been disposed to look upon inebriety as more frequently a vice demanding the pleading of the pulpit than the ministrations of the physician. He disapproves of the indiscriminate, nay even the free giving of alcohol to children. "Keelyism" is unqualifiedly condemned as irregular and unworthy of even the slightest indorsement by any regular physician. The work deals with alcoholism in its medico-legal aspect, as well as in its clinical manifestations, with treatment and so forth, and is largely a compilation from well-known writers and authorities.

One is singularly impressed by the fact that in treating the legal phase of the subject the author quotes chiefly English jurists, but when he takes up the medical side of the question he quotes American authorities almost exclusively, thus leaving the reader to believe that in Great Britain inebriety is treated by courts of law, while in America it is treated by physicians.

A Handbook of Pathological Anatomy and Histology, with an Introductory Section on Post-mortem Examinations and Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D. New York: Wm. Wood & Co., 1892.

A book that has reached a fourth edition in a comparatively short time needs no extended review, especially when, as in the present instance, internal evidence manifests careful revision, bringing the subject-matter fully up to recent knowledge.

The preliminary chapters on post-mortem examinations and the examination of diseased tissues are essentially practical and useful, particularly the former. The discussion of pathologic technique is very brief, though, perhaps, sufficient for the uses of the general reader. Those desiring further knowledge will avail themselves of special treatises.

The body of the work is devoted to the discussion of general pathology, including the consideration of microorganisms and the various infections, and of the special pathology of the individual organs and tissues. There is also added a section "on the lesions found in general diseases, in poisoning, and in violent deaths," which, in a rigidly scientific treatise, would be unnecessary, from the fact that the contents must be merely a repetition of matter treated of in various places in the consideration of the different organs and tissues; but the practical usefulness of such summaries will commend them to the general practitioner. This practical or, if we may so term it, clinico-pathologic character of the book is a conspicuous and commendable feature throughout. We note, with regret, the absence of all reference to the pathology of the nasal chambers, the importance of which is commonly overlooked by the general medical man. Throughout the book the evidences of the individual and careful work of the authors is conspicuous,

especially in the chapters devoted to the lungs and kidneys, and, though we may not be disposed to agree on minor points, the general exposition of the pathology of the various organs seems accurate and reliable. The illustrations are all original and constitute not the least attractive feature of the work.

CLINICAL LECTURES ON ABDOMINAL HERNIA, CHIEFLY IN RELATION TO TREATMENT, INCLUDING THE RADICAL CURE. By WILLIAM H. BENNETT, F.R.C.S., Surgeon to St. George's Hospital (London), etc. With twelve diagrams. Small 8vo, pp. 225. London: Longmans, Green & Co., 1893.

THIS is a book of great practical value, on a subject which can never lose its interest to the surgeon. Of the eleven lectures contained in it, three were originally published in the pages of the *Lancet*, and many who have read them there will no doubt be glad to possess them in this more permanent form, with the additional material now presented.

The topics discussed are: The deceptive nature of the symptoms of strangulation in hernia; the occurrence of such symptoms in cases in which the hernial sac apparently contains neither omentum nor bowel; some peculiarities met with in the arrangement and shape of hernial sacs; some of the difficulties and dangers of attempts at reduction of hernia by manipulation; the management of damaged bowel in strangulated hernia; median abdominal section in the treatment of hernia; certain unfavorable symptoms occurring after the reduction of strangulated hernia, whether with or without operation; the radical cure of hernia. All of these matters are discussed by Mr. Bennett in a clear and forcible style, and, with the exception of the last named, are illustrated by graphically-told clinical histories.

Did space permit, we should gladly quote some passages from these pregnant pages. In regard to treatment, Mr. Bennett seems to us to be in the best sense conservative. For example, while he does not absolutely condemn the resection of gangrenous intestine in strangulated hernia, he takes the ground that "the coexistence of a condition of the gut hopeless enough to require resection, with a state of the patient which is good enough to justify the operation, must be very rare." We may also express our entire agreement with his views as to median abdominal section in the operative treatment of hernia. His statement of the objections to this procedure can hardly be controverted with success, even by its brilliant proposer and advocate.

This book does not pretend to be a treatise on hernia, but simply deals with points suggested by cases which presented themselves in the wards of one of the great London hospitals. We feel assured that no practical surgeon, giving it the careful reading which it deserves, will fail to find in it both interest and instruction. Its merits will be best appreciated by those whose own experience has been the widest.

SYSTEM OF DISEASES OF THE EAR, NOSE, AND THROAT. Edited by CHAS. H. BURNETT, A.M., M.D. Vol. I. 8vo, pp. 789. Philadelphia: J. B. Lippincott Co., 1893.

THIS work will be completed in two volumes. The first volume, dealing with diseases of the ear, nose, and naso-pharynx, is, on the whole, a creditable addition to literature. Naturally the various chapters by different authors are unequal, but all are meritorious. In many of them we find statements justly open to debate, such, for example, as the mistaken dicta concerning the importance and the methods of treatment of adenoid vegetations, which mar an otherwise excellent chapter by Dr. Seiss; but detailed criticism is impracticable. In this connection, however, we would emphasize the importance of doing operations in the naso-pharynx under guidance of rhinoscopy and not of touch. Perhaps the best single chapter is that by Dr. Major, of Montreal, on Lupus, Syphilis, Tuberculosis, Glanders, and Diphtheria of the Nose and Naso-pharynx. John N. Mackenzie, of Baltimore, contributes an admirable study of atrophic rhinitis. Seiler, of Philadelphia, attempts to establish a difference between grip and influenza. The article shows careful observation of cases, but inadequate critical grasp. It is, however, a useful addition to knowledge.

The editor contributes an article on "Chronic Purulent Otitis Media," marked by his well-known clearness of expression, richness of experience, and soundness of judgment. Other specially valuable articles are those by Dalby upon "Foreign Bodies and Osseous Growths in the External Auditory Canal;" by Bacon on "Diseases and Injuries of the Membrana Tympani;" by Colles on "The Middle Ear in Renal, Malarial, Syphilitic, Gouty, Rheumatic, and Dental Diseases;" by Jack on "Removal of the Stapes;" by Blake on "Mastoid Disease;" by Oliver on "Ocular Lesions in Aural Diseases;" and by MacCoy on the "Anatomy and Physiology of the Nose and Naso-pharynx."

This being—fortunately or otherwise—the era of systems and coöperative authorship, we predict for Burnett's system the large sale that it deserves.

TREATISE ON THE DISEASES OF WOMEN, FOR THE USE OF STUDENTS AND PRACTITIONERS. By ALEXANDER J. C. SKENE, M.D., Professor of Gynecology in the Long Island College Hospital, etc. Second edition, revised and enlarged, with 251 engravings and 9 plates in color. Pp. 968. New York: D. Appleton & Co., 1892.

IN the preface of the first edition of this work the author states: "This work was written for the purpose of bringing together the fully matured and essential facts in the science and art of gynecology, so arranged as to meet the requirements of the student of medicine, and be convenient to the practitioner for reference." The demand for a second edition has demonstrated how fully this purpose has been accomplished. The reader cannot fail to commend the conservatism and honesty of the author's opinions, and the care with which the material has been collected and arranged. The second edition contains new chapters on ectopic gestation, diseases and injuries of the ureters, and vesical hernia. The first of these subjects receives in this edition a careful exposition, the want of which was among the few defects of the former edition. The author's conservatism, however, in this very important branch scarcely meets the standard which recent investigations on this subject have demanded. His advocacy of electricity forms too prominent a contrast to the treatment of the surgical aspect of the subject.

The author's work in the positional disorders of the uterus and laceration of the perineum stands preëminent among the contributions to this subject. His discussion of the use of pessaries throws much light upon a subject which has suffered from the want of careful treatment, both pro and con.

The publishers deserve great credit for the illustrations and general style of the work.

The Surgery and Surgical Anatomy of the Ear. By Albert H. Tuttle, M.D., S.B. (Harv.). Pp. 96, with twenty-eight original illustrations. (Physician's Leisure Library.) Detroit: George S. Davis.

This little book contains twenty-eight excellent original photogravures of the surgical anatomy of the temporal bone, but a great many inexcusable mistakes in spelling throughout the work. Of the twenty-eight legends beneath the illustrations, *eighteen* contain *repeated* mistakes in the spelling of the names of the various parts of the temporal bone, as, for example, "processus cochleariformi" instead of processus cochlariformis, occurs eight times in the legends besides elsewhere in the booklet; in fact, it is not spelled correctly anywhere, so far as we have been able to discover. "Fenestra ovale" occurs seven times instead of "fenestra ovalis," and "sigmoides" five times instead of "sigmoideus." An author is not obliged to use Latin names, but when he does he ought to use correct ones.

Proper names are incorrectly spelled in many places; thus "Schrapnell" for Shrapnell (Fig. 23 and table of contents), "Hugierer" for Huguier (Figs. 9 and 10), "Wrenden" (p. 101) for Wreden, and "Boltey" (p. 101) for Botey, in the bibliography. The text includes a fair resumé of modern otology.

An Introduction to the Study of Diseases of the Skin. By P. H. Pye-Smith, M.D., F.R.S., Physician to Guy's Hospital. Pp. 408. Philadelphia: Lea Brothers & Co., 1893.

This excellent book, written by one fully conversant with the subject, both in theory and in practice, may be heartily commended to the practitioner, as well as to the student. The subject is handled from the standpoint of modern dermatology, and at the same time teaches that theories should not override facts. Conservatism of this character is always to be commended. The work possesses distinctive originality, which makes it both attractive and valuable. While it is not a large volume, and is modestly styled an "introduction," it really possesses more of intrinsic worth than many other more pretentious books. The views as to pathology and treatment are modern, and are quite up to date. The author is to be congratulated upon having written a sound and useful book.

Cholera: Its Causes, Symptoms, Pathology, and Treatment. By Roberts Bartholow, M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College, of Philadelphia. 12mo, pp. 127. Philadelphia: Lea Brothers & Co., 1893.

Within the limits of this little volume Dr. Bartholow has made a faithful presentation of the modern conception of cholera, based upon personal experience in two epidemics and upon a voluminous literature. The subject is considered in five chapters. The first consists of a brief historic introduction, the second deals with the etiology, the third with the symptomatology, the fourth with the pathology and morbid anatomy, and the last with the treatment. The practical character of the work is indicated by the fact that nearly half of the volume is dedicated to a consideration of the subject of treatment, including methods of prevention, quarantine, disinfection, vaccination, and general medication. The appearance of the book is most timely and, coming from such an eminent authority, will commend itself as a safe and useful guide upon a most important subject.

NEWS ITEMS.

The Proposed Bill of the New York Academy of Medicine to Establish a National Health-Bureau.—As reported by the Committee of the Academy, the following is the proposal:

A Bill to establish within the Treasury Department a Bureau of Public Health.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

Section 1. That for the purposes of this Act the States and Territories of the United States be and are hereby grouped into districts, to be known as "the sanitary districts of the United States," as follows:

The Northern Sanitary District shall include the States of Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Wisconsin.

The Northeastern Sanitary District shall include the States of Connecticut, Massachusetts, Maine, New Hampshire, New York, Rhode Island, Vermont.

The Northwestern Sanitary District shall include the States of Idaho, Montana, North Dakota, Oregon, Washington, and the Territory of Alaska.

The Eastern Sanitary District shall include the States of Delaware, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia, and the District of Columbia.

The Western Sanitary District shall include the States of California, Nevada, Utah, and the Territory of Arizona.

The Southern Sanitary District shall include the States of Arkansas, Alabama, Kentucky, Louisiana, Missouri, Mississippi, and Tennessee.

The Southeastern Sanitary District shall include the State of Texas, and the Territories of Indian Territory, New Mexico, and Oklahoma.

The Central Sanitary District shall include the States of Colorado, Kansas, Nebraska, South Dakota, and Wyoming.

THE HEALTH-BUREAU.

Sec. 2. That there shall be established in the Treasury Department, under the direction and supervision of the Secretary thereof, a Bureau of Public Health, to consist of a commission of fifteen, of whom eleven shall be appointed by the President, by and with the advice and consent of the Senate, as follows, viz.: One medical commissioner from each of the "Sanitary Districts of the United States," provided in Section 1 of this Act, and two commissioners at large; the compensation of the appointed commissioners, when actually engaged in

the performance of their duties under this Act, shall be $10 per diem and reasonable expenses.

The other four members of the commission shall be the Surgeon-General of the Army, the Surgeon-General of the Navy, the Supervising Surgeon-General of the Marine-Hospital Service, and an officer learned in the law, detailed by the Attorney-General from the Department of Justice. These four members shall receive no compensation.

ANNUAL SESSIONS AT WASHINGTON.

Sec. 3. That the members of the commission shall meet at such time and place as may be designated by the Secretary of the Treasury, and organize by the election from their own number of a president who shall be one of the members at large and who shall receive $5 per diem in addition to the $10 per diem provided in the last section, when actually engaged in the performance of his duties under this Act.

The commission may appoint a secretary, not one of its number, and fix his salary at a sum not exceeding $3000 annually. The commission shall thereafter meet annually at Washington, on the first Tuesday of October, and at such other times and places as the president of the commission, with the approval of the Secretary of the Treasury, shall designate.

A COMMITTEE OF HEALTH SENTINELS.

Sec. 4. That there shall be an Executive Committee of the commission, consisting of its president, the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Supervising Surgeon-General of the Marine-Hospital Service and the officer detailed by the Attorney-General.

The commission shall from time to time prescribe the duties of the Executive Committee, and may make all needful rules and regulations for its own control and for the guidance and discipline of all its officers and employés, and shall establish all rules and regulations for the government of national sanitation in all of its foreign and inter-State relations and special departments in the enforcement of the provisions of this Act.

EXTRAORDINARY CONFERENCES WITH STATES.

Sec. 5. That when, in the opinion of the president of the commission, the interests of the public health would be promoted by a conference of the commission with the State Boards of Health of the several States, or of any sanitary district or districts, he is hereby authorized to invite, with the approval of the Secretary of the Treasury, said State Boards of Health, or such number thereof as he may designate, each to delegate one of its members to meet the commission in conference at such time and place as he may appoint. The president of the commission shall be the president, and the secretary of the commission shall be the secretary of any such conference. The delegate in attendance upon the conference from each State Board of Health shall be entitled to receive reasonable compensation for expenses for a session not exceeding three days, to be paid on vouchers provided by the Secretary of the Treasury.

Medical Practice in Colorado.—The Colorado State Board of Medical Examiners announces that hereafter it will recognize only diplomas from three-year schools as entitling their holders to license. The courses of lectures must have been of at least twenty weeks each, and have been given in three separate years, and a preliminary examination must have been required. Instruction must have been given in anatomy, chemistry, physiology, pathology, materia medica and therapeutics, obstetrics and gynecology, surgery, medical jurisprudence, theory and practice of medicine, and hygiene.

In default of such a diploma the candidate for license must pass an examination in anatomy, chemistry, physiology, pathology, surgery, obstetrics and gynecology, and theory and practice of medicine.

A Meeting and Banquet of Medical Editors attending the Pan-American Medical Congress will be held in Washington, September 4th—the day preceding the assembling of the Congress. Particulars may be obtained from Dr. I. N. Love, 3642 Lindell avenue, St. Louis, who has been appointed Chairman of the Committee of Arrangements.

A Professorship of Ophthalmology at Harvard, it is announced, is to be endowed in the sum of $25,000 by Dr. Henry W. Williams.

BOOKS AND PAMPHLETS RECEIVED.

Ventilation and Heating. By John S. Billings, A.M., M.D., LL.D., and D.C.L. Oxon. New York: The Engineering Record, 1893.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George A. Piersol, M.D. Part IV. Philadelphia: Lea Brothers & Co., 1893.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D. Vol. I. Philadelphia: W. B. Saunders, 1893.

Albuminate of Iron. By W. Blair Stewart, A.M., M.D. Reprinted from the American Therapist, 1893.

The Medical Lore of Shakespeare. By R. Newton Hawley, M.D. Reprinted from the Medical Age, 1892.

Prospectus of the London Post-Graduate Course. Fourth Year. Summer Term, 1893.

A Contribution to the Study of Cerebro-spinal Meningitis. By Wm. Broaddus Pitcher, M.D. Reprinted from the New York Polyclinic, 1893.

Transactions of the American Pediatric Society. Fourth Session. Edited by Wm. Perry Watson, A.M., M.D., Recorder. Vol. IV.

A Remarkable Respiration-record in Infantile Pneumonia. By William A. Edwards, M.D. Reprinted from the Archives of Pediatrics, 1892

Acute Enlargement of the Thyroid Gland; Angio-neurotic Edema. By William A. Edwards, M.D. Reprinted from the International Medical Magazine, 1892.

Methods of Precision in the Investigation of Disorders of Digestion. By J. H. Kellogg, M.D. Battle Creek, Mich.: Modern Medicine Publishing Co., 1893.

Third Act of the Drama of Syphilis. By Henry A. Robbins, M.D. Reprinted from the Virginia Medical Monthly, 1892.

The City of Philadelphia: its Stockholders and Directors. By Charles Richardson. Prepared for and issued by the Municipal League of Philadelphia, 1893.

The Sympathetic Nerve and Abdominal Bruit in Gynecology: Its Reflexes and Rhythm. By F. Byron Robinson, B.S, M.D. Reprinted from the North American Practitioner, 1892.

The Nine Circles, or the Torture of the Innocent: Being Records of Vivisection, English and Foreign. Compiled by G. M. Rhodes; with Introduction by Edward Berdoe, M.R.C.S. London: Swan, Sonnenschein & Co., 1893.

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ORIGINAL ARTICLES.

INVESTIGATION OF THE OUTBREAK OF BERI-BERI ON BOARD THE BARK "PAX," FROM CEYLON, WITH A CARGO OF GRAPHITE.

BY ALBERT S. ASHMEAD, M.D.,
OF NEW YORK.

THE iron bark "Pax" left Colombo, Ceylon, February 2, 1893, Cochin, Malabar Coast, February 23, with this cargo: Plumbago, in barrels, 1200 tons; cocoanut oil, in tierces, 400 tons; cocoanut fiber, 1200 bales (80 lbs. to the bale); lemon-grass oil, 95 wine cases; nux vomica, 200 bags (100 lbs. to the bag); turmeric, 200 bags (100 lbs. to the bag); ginger, 444 sacks (100 lbs. to the sack); stick sandal-wood, 200 bundles.

The ship had previously carried a cargo of saltpeter from Iquique, Chile, to Dunkirk, Scotland. Thence it went to Cardiff, South Wales, took a cargo of coal, and went to Bahia, Brazil; discharged the cargo there, and after taking a ballast of sea-sand sailed for Ceylon.

I have obtained from Captain Geeseicke the following information regarding his trip: He had exceptionally dry and fair weather during the whole voyage. Only once, in south latitude 24° 12′, east longitude 65° 21′, did he have a little hurricane, which lasted twenty-four hours. The weather was hot throughout. On May 1st the first mate was taken down with weakness in the knees, pains in the calves, swelling in the ankles, and partial suppression of urine. On May 13th he again reported for duty. On May 15th the captain himself and another of the men suffered from the same symptoms. On May 30th they went to work again. On June 7th the same symptoms appeared in three new men; on June 9th in four more. On June 10th one of these reports for duty. During the entire trip all but six of a crew of nineteen were, more or less, affected with the same symptoms. One died—a cabin-boy, twenty-one years old. The captain does not think that the disease of which this man died was beri-beri, but dropsy, of which his mother, sister, and brother had also died in England. The boy had gone to Brazil when fourteen years old, and, according to the custom, was returning, after a residence of six years, to recruit his health. It became evident, however, from the captain's description of the symptoms, that the disease was beri-beri, the same as that with which the others were affected in a minor degree. I understood that he had increasing dropsy up to the neck, loss of power in his limbs, cyanosed face, and dyspnea, dying in the true attitude of pernicious beri-beri—in a sitting position.

The crew was exclusively composed of Europeans. The bark arrived at the quarantine in New York Harbor on Saturday, July 8th. The captain and ten men were sick at that time with beri-beri. On my visit to the ship I found the former convalescent, but with both legs swollen, loss of reflexes, typical "sheep's run" gait of beri-beri, prolonged muffled first sound of heart, and some paralysis of ocular accommodation still persisting. The first mate and six men had been transferred to the Long Island College Hospital. Three other beri-beri convalescents were still on board. The first-mate was said to be very seriously ill. He had vomiting and circumscribed edema on the back. These are both serious symptoms.

That the disease with which this crew was stricken is beri-beri there can be no doubt. Now the question is: To what causes can the outbreak be traced? The information that I have obtained satisfied me entirely that in this case, as in another case of the same kind,[1] that of the bark "H. B. Cann," the cause was carbonic poison.

Here are the details that were communicated to me by the captain and the second mate:

There were in the ship 1200 tons of *pure carbon* which is usually shipped in lumps, packed in barrels, as it comes from the mines. Many of the barrels were in bad condition, while the lumps had fallen to pieces under the influence of an unusually dry heat, and had eliminated their carbonic gases. This became evident by even a superficial inspection of the iron in the hold of the ship. All the iron parts were incrusted as if by an acid. This appearance could not have been due to the simple contact of the graphite; such a strong corrosive action could only be a chemical one.

Bad smells were coming through the ventilators during the whole trip. These were accounted for by some kind of rottenness in the turmeric. As the cocoanut oil was in tierces and the tierces were afterward found to be only wet with the usual leak-

[1] University Medical Magazine, December, 1892.

age of the oil (which is only 1 per cent. for Cochin and from 2 to 3 per cent. for Colombo oil), and as, moreover, this oil has never been known to undergo fermentation during a voyage, it could not be held responsible for the odor. This odor was so suffocating that if the ship had not been an iron one, the crew could not have tolerated it, because in a wooden ship it would have penetrated through cracks and chinks and made itself felt everywhere; as it was, it was carried alone by the ventilators.

The diet also had nothing to do with the outbreak—there was no want and no fault with it. It included fresh potatoes and lime-juice once a week, and sauer-kraut once a week; a double allowance of lime-juice with grog and quinin was served to the whole crew after the first case had appeared; three-fourths of a pound of preserved meat or one pound of salt meat were served each man daily. During the whole voyage five tierces of salt meat (300 pounds each), and four barrels of pork (200 pounds each) were consumed; from 30 to 36 pounds of preserved meat were consumed every week.

In this case, as in most others, we find the south wind associated with the beri-beri outbreak. There were southeast trades from the Cape of Good Hope to the North Atlantic. The connection between this wind and the outbreak of beri-beri is, in my opinion, a very real, although an indirect, one. The wind is a breeder of intense heat, especially in an iron ship loaded with such heat-absorbing stuff as carbon. This was, said the captain, although he had kept no record of temperature in his log-book, the hottest trip he had ever made. Usually humidity and heat (86° F.) work together in the production of carbonic gases; that is, in cargoes consisting of sugar, wheat, etc., when the trouble arises from fermentation. But in our case, heat alone was enough. because no fermentation was necessary to call into existence carbonic compounds; the direct action of the heat was sufficient.

I have taken pains in this investigation to find out from what source the carbonic poison (which I believe is always the ultimate origin of beri-beri) was derived. I not only found carbon in good disposition for being decomposed, but 1200 tons of it placed during a long sea-voyage in the best condition for decomposition.

NOTE.—There are many among the laity who consider the action of carbon monoxid as an asphyxiating, suffocating one only. But this is a mistake. Carbon monoxid enters the blood without change, and poisons the corpuscles. Dr. Gréhant (*Tribune Médicale*, September 8, 1892, and February 16, 1893) has recorded the results of some very interesting experiments. He has established the law of absorption of the carbon monoxid by the blood of a living mammal, by compounding a series of mixtures of carbon monoxid and air at 1:1000, 1:2000, 1:4000, 1:10,000. He then takes from the carotid of a dog a sample of arterial blood, and extracts the gases at 40°; then he causes the mixture to be inhaled for half an hour, and examines a sample of the blood at that moment. The results of the analysis show that this blood contains less oxygen than the first test-blood, and the figures that represent the carbon monoxid disengaged are exactly proportionate to the quantities of toxic gas introduced into the air. M. Gréhant concludes from these facts that the carbon monoxid is dissolved in the blood-corpuscles, according to the law of Dalton. He has applied his process, using the animal, in order to research and to dose the carbon monoxid in a confined atmosphere.

I shall now give the description of the beri-beri blood, by Dr. Wernich, who did not see in the disease a carbonic poisoning, but, with Dr. Takaki, explained it as an endemic anemia. It will be seen that his description is exactly that of a blood poisoned with carbonic oxids.

"The blood of the beri-beri patients (the examinations of which were, of course, mostly made on the living) showed, compared with the blood of healthy persons, a less vividly red, somewhat dirty coloring, but no especially watery composition. Peculiar adhesiveness or peculiar odor was not found in the samples. Microscopically the number of the red blood-corpuscles did not seem changed. The number of the white seemed not increased. The latter, moreover, showed nothing peculiar in their shape, wherever they appeared distinctly; yet, there were found scattered among them finely granulated, feebly light-yellow, shining, clumpy masses, whose circumference was usually about twice that of the white corpuscles, and sometimes, but rarely, less. It was distinctly visible that the larger of these clumps were not, as might have been thought, compounded of two white blood-corpuscles conglutinated. The red corpuscles, in the initial stages and in the light cases of the disease, did not show themselves different, either as a relative quantity or in shape, from those of normal blood (always observed simultaneously, and under identical conditions). On the other hand, in all advanced cases the size of the single corpuscles was visibly diminished, in comparison with the normal ones. The corpuscles, besides, presented frequently, in these cases, a distinct strawberry or narcissus form (being garnished with small humps and points), and lacked, without exception, the capacity to form rouleaux; while the normal blood, examined at the same temperature, with the same serum or sugar solution, neither lacked this latter capacity nor showed those humpy corpuscles. On account of the often-demonstrated repetition of these conditions, I consider *the small size of, and the loss of cohesion, in the red corpuscles, as characteristic of the beri-beri blood, and the appearance of strawberry-like bodies, still easily recognized as red blood-corpuscles*

(*shrivelling*), *as a marked symptom of advanced cases. All* corpuscles in the blood, down to the smallness of detritus grains, were distinctly colored like the blood-corpuscles. No *colorless* corpuscles, transition-forms between red and white blood cells, could be found in the cases that came to notice, nor any cells of foreign animal and vegetable organisms.

"The spleen was not found enlarged in the autopsies. As far as notes on the matter exist, it was hard but somewhat brittle, of distinct design in regard to the trabeculæ, less distinct in regard to the follicles, and rich in blood. Amyloid degeneration was nowhere discovered."

ADDENDUM.

In conclusion, I wish to refer to an article of mine entitled, "Three Ships with Beri beri Outbreaks, shown to have had Extensive Formation of Carbonic Oxids during the Voyage: Analysis of Beri-beri Blood: Conclusion that Beri-beri is Nothing but Carbonic Poisoning of the Blood," in *Science*, July 28. In that article the following facts appear: There is no deficiency of red corpuscles, no anemia in beri-beri; but in all cases, without exception, a deficiency of hemoglobin; an increase of biliary matter, bilirubin, etc.; the corpuscles are bladder-shaped, and have lost their disposition to form in rouleaux; the deficiency of hemoglobin is due to the presence of oxids of carbon.

The same article contains an account of a coffee-laden ship from Java, whose cargo was carbonized during the voyage, and whose captain and three men died of beri-beri at sea.

I have also contributed an article entitled "Altitude in Spite of Humidity as a Cure of Beri-beri" to the American Climatological Association. In it I try to show that the altitudinal cure, the only really successful one used in Japan during the beri-beri season, is due to the influence of ozone on the blood of beri-beri patients. This influence M. Gerard thus defines: "Ozone transforms albumin into fibrin and hemoglobin into oxyhemoglobin. Its action, when prolonged on this fibrin in the nascent state, re-dissolves it and makes it incoagulable by acids and also by metallic salts. Ozone is the agent of the transformation of blood into fibrin, and the effects of ozonization are produced by the iron contained in the corpuscles, which iron, under the influence of a first ozonization, acquires the property of ozonizing ordinary oxygen."

The prolonged absence of the ozone influence, therefore, and the prolonged presence of its antagonistic carbonic oxids, we may safely conclude are the causes of the extreme fluidity of blood of persons dead of beri-beri. Beri-beri patients who have absorbed poison enough to destroy life show at autopsy an extremely free flow of blood, that is, a complete absence of plasticiity. Convalescents, on the contrary, show increased plasticity.

Messrs. Bertin-Sans and Moitessier show, in a very interesting article in the *Tribune Médicale*, September 10, 1891, that it is the presence of hydrogen and carbonic acid in oxycarbonized blood that prevents the total destruction of hemoglobin. By adding potassium ferrocyanid to oxidized blood, mixed with water, they obtained a solution of methemoglobin, which, heated with ammonium sulfid, gave the spectrum of oxycarbonized hemoglobin. They were able to free their solution from its oxid of carbon by sweeping it for twenty minutes with a current of hydrogen or carbonic acid, or else leaving it during five hours in a vacuum: the addition of ammonium sulfid called forth then only the spectrum of reduced hemoglobin. It will be seen by this that oxycarbonized hemoglobin—a stable combination—can be readily transformed into a mixture of methemoglobin and oxid of carbon. Upon this fact they found their method for ascertaining the presence of oxid of carbon in the blood.

IS IT DESIRABLE AND PRACTICABLE IN MEDICAL SCHOOLS TO TEACH METHODS OF INVESTIGATION IN MEDICAL LITERATURE?

By BAYARD HOLMES, M.D.,
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Readers of American medical journals and medical books complain of the low literary standard of the majority of writers. Two-thirds of the bulk of our professional periodicals are devoted to avowed advertisements, while the reading pages are given up to articles frequently without literary excellence and of questionable motive. It may not be out of place to describe a recent effort undertaken to prepare a class of medical students to write intelligently on any medical subject.

This class consisted of thirty-six men, seven of whom had received the Bachelor's degree from reputable literary institutions, and one of the thirty-six had the Doctor's degree from one of the best Eastern universities. Of the others, eight read one language beside English, and four read two foreign languages. The German, French, Italian, Spanish, Scandinavian, and Russian languages were read by different members of the class. More than half the class were able to read without difficulty in at least one foreign language. There was no case of remarkable illiteracy in the class, and few of its members made any of the more flagrant infractions of the laws of grammar and rhetoric. All were eager, honest students, seeking for medical instruction and not for a diploma alone, as their presence in the class during the optional summer course sufficiently testified.

My own acquaintance with the class was intimate. My knowledge began with their preliminary examination, and was continued in a constant oversight during two previous years. It was furthered by one course of lectures to them, two examinations in bacteriology and six written exercises on the current surgical course. A large part of the class had studied composition for the sake of composition, while a few only held the labor of composition in contempt, and no amount of assistance or friendly

criticism could arouse these few to an application of the importance of a study of purity and clearness.

The object of the course was to assist those men that were already able to write English clearly and forcibly, to write on familiar medical subjects with a mastery of the existing literature.

A lecture was first given, designed to show the material of medical literature. In order to make the impressions more vivid and lasting, copies of the various serials were passed around the class for inspection. In this way especial attention was called to those great fountains of medical thought, such as the *American Journal of the Medical Sciences*, the *Lancet*, *Virchow's Archiv*, and the principal weekly journals of the United States. The more classical text-books were also described, and copies not familiar to the class were exhibited, and the method of consulting them was pointed out. One or two examples of systematic or encyclopedic medical storehouses, such as *Ziemssen's Cyclopedia* and the *Deutsche Chirurgie* of Billroth and Lücke were also exhibited and examined with reference to their future use.

With this limited survey of the material of medical literature my next effort was to show where and how this material could be consulted. The fact was pointed out that there were but five general medical libraries in the United States, and that all exhaustive work in medical literature must, for the present, be done in these five places. Attention was called to the library of the Surgeon General's office at Washington, because of its completeness, and to the Newberry Library, because of its nearness. Through the courtesy of the medical librarian of this library, Dr. G. E. Wire, these exercises were held in the lecture-room of the library, and all the material of the library was placed at our disposal, and every assistance offered for study. The method of indexing the library was briefly described, and each student was required to make the cards for at least one book, with cross-references. The use of the card-catalogue was then explained, and each man was required to pick out references on one subject.

This done, a full account of the method of literary research was given, with much stress laid upon *exact and permanent* notes. A lot of properly shaped tablets and covers were distributed, and every man was exercised in note-taking. All criticisms were made openly before the class, and after the criticism a rewriting was required when indicated. Thus, many of the technical difficulties were overcome before more serious difficulties were met.

When these preliminary studies were completed, those aids to literary research most complete and manageable were described and studied. First the *Index Medicus* was examined, and the plan upon which it is arranged and indexed was carefully studied. Each student had a bound volume of this serial before him. When a general idea of this work had been obtained and one subject looked up as an example, a series of subjects for theses previously arranged was distributed, and one subject, known to be not too liberally represented in the literature, was assigned to each student for a serious effort, and work was begun in earnest. The subjects were all in the line of the work required in the courses being pursued by the men to whom they were given.

When each man had consulted each volume of the *Index Medicus* and had made a list of all the references to the literature that he could find, a week was given for study. Students were advised to follow some such order as the following in preparing the theses:

1. Read the subject in text-books.
   (a) Anatomic. (b) Pathologic.
   (c) Clinical. (d) Historic.
2. Read the subject in encyclopedias.
3. Read the references in the serial literature.
4. Cast the thesis from the notes taken in the reading.

Again the class had the help of the librarian, Dr. Wire, in solving the difficult problems which come to the beginner in the course of such a study. Many of the articles referred to were not acceesible; many were not valuable when found, and some were difficult to utilize. A sufficient interest was, however, aroused to secure results far above that of any previous class-work that it has been my fortune to observe. Some men did their work thoroughly and exactly; others imitated exact work, but produced soulless stuff; while a few failed entirely after collecting with great labor an unmanageable mass of material.

At our next meeting three essays that had been completed were read one after the other before the class, and criticised openly by all. Other finished essays were retained by their writers because by this criticism they saw how to better them. A few who had done the work in the library, and were unable to cast their notes into a thesis, from lack of motive or skill in such work, were assisted by me and by members of the class who volunteered to help.

In addition to the *Index Medicus* and its supplement, the *Catalog of the Library of the Surgeon-General's Office*, similar instruction was given in the use of *Virchow and Hirsch's Jahresbericht*, *Schmidt's Jahresbücher* and the *Archives Générales de Médecine*, and when the subject suggested it, to similar publications in limited fields, such as *Baumgarten's Jahresbuch*, *Centralbatt für Bakteriologie* and allied publications. For the sake of simplicity, however, much was left to availability and individual needs.

Two weeks later all the theses were handed in to me,

together with all the notes and references. This was done so that not only the end-result of the study could be considered, but the method of work could be criticised.

If there were a medical journal for medical teachers alone it would be worth while to publish one or two of these essays, but space and the time of the general reader are too valuable to permit it here.

Many members of the class spontaneously expressed themselves as greatly pleased at discovering this new field of which they had before only indistinct conceptions. A few have continued their studies and are trying to get an exact and comprehensive idea of medical literature, hoping to be abe to do better work next year and after graduation. One man said that he never before appreciated the poverty of the medical curriculum or the absurd brevity of the ordinary course. He said that he saw, as he never had before, the need of the most liberal preparation for the study of medicine and the helpless condition of the unprepared to get the value and enjoyment from medical study which it affords.

This first experiment in teaching methods of thesis-making in medicine, though incomplete in many respects, satisfied me that the teaching of correct methods in literary investigation to our average medical student is perfectly practicable. It satisfied me that while the conservative bias for which medical students have frequently been reproached may lead many to begin this new subject reluctantly, the evident advantages that are to be quickly obtained arouse an interest and enthusiasm in almost every one sufficient to overcome the discouragements of a polyglot literature and an incomplete library. I can unhesitatingly and positively recommend that such a course be made an integral part of the curriculum of every medical school that aspires to be known for its means of education and culture.

CLINICAL MEMORANDA.

HOW POSITIVE MENTAL IMPRESSIONS PROMPTLY CURED A CASE OF HYSTERICAL BLINDNESS.

By JULIAN J. CHISOLM, M.D., LL.D.,
PROFESSOR OF EYE AND EAR DISEASES IN THE UNIVERSITY OF MARYLAND; SURGEON-IN-CHIEF TO THE PRESBYTERIAN EYE, EAR, AND THROAT CHARITY HOSPITAL, OF BALTIMORE.

In the entire range of hysterical enigmas there is no more curious condition than that of complete suppression of an important sense—as, for instance, that of vision. In an eye to every physical appearance normal, blindness more or less suddenly is complained of; continues absolute for weeks, or months, or even years; and then miraculously disappears, leaving the organ in perfect working order.

How this long suppression is effected is one of the unsolved problems in physiology. We have evidences of the existence of this mental faculty when we use the microscope with both eyes open. The eye applied to the instrument can be made to receive impressions, while the other, equally capable, stares at the table in vacancy, unconscious of the presence of the many objects which this eye can take in upon its field of vision. We have also examples of this visual suppression in cases of squint. Here, to be sure, one of the eyes is usually more feeble in visual power. There are, however, many persons with alternate strabismus, in whom both eyes are of equal strength, and yet vision is completely suppressed in the diverted eye.

The accepted explanation is that the image in the eye improperly directed is received upon the marginal, insensitive part of the retina, and makes too feeble an impression for brain-interpretation. This reason is not always satisfactory. When the eye of an adult turns in or out, the sequence of paralysis of one of the eye-muscles, the same marginal portion of the retina transmits so vivid an impression as to produce an extremely annoying diplopia. In hysterical subjects the eyes remain in the correct position, and hence images are made on each central fovea, which is that portion of the retina designed by nature for the most perfect sight; and yet, while each eye is positively free from disease, one eye sees perfectly well and the other, according to the patient's statement, sees absolutely nothing. The cause to which this disturbance is usually assigned is a reflex irritation from some unrecognized distant lesion; but this is not satisfactory. In the case which I here report, there was no attempt to seek or to treat any local hidden cause, for none was suspected. The young lady was not of plethoric habit, but was in fairly good condition, although somewhat anemic. Her medical history was as follows:

Miss J. C. P., the daughter of a practising physician, had been taken from school on account of blindness in one eye, which had come on suddenly four months before. She was a well-grown girl, seventeen years of age, and had been brought up in affluence. Under parental professional care she had taken tonics for anemia, but the eye continued blind. At times she would complain of hemorrhages from this eye, and would show stained handkerchiefs in evidence of her statements. As the eye was at no time injected, and showed no external evidences of disease, the anxious father consulted an eye-specialist in his own State to aid him in the diagnosis. This ophthalmic surgeon suspected the true condition of affairs, called the disease hysteria, and advised a course of tonics. Vision, however, did not come back under this medication. After four long months of constant complaining the father and daughter came to Baltimore, seeking further medical advice. The patient gave a straightforward statement that with the right eye she saw perfectly well, but with the left eye she could not detect even light. She also reiterated her hemorrhagic experiences. Upon most careful examination, one eye seemed the counterpart of the other. There was no trace of any previous pathologic condition which could explain the reported hemorrhages or the

loss of sight. Either and both pupils acted uniformly under light-stimulation. Ophthalmoscopic inspection revealed no disease. The conclusion reached from the examination and the behavior of the eyes was that notwithstanding the innocent simplicity and evident truthfulness of the young lady, the blindness was a simulation, a true hysterical amaurosis. This diagnosis was made absolute when, after trying the weakest concave lens before the good eye, I substituted for it the strongest concave lens of the trial case. Although such a lens must destroy all useful vision when placed before a good eye, she could with equal facility read the No. 20 test-types at twenty feet. This was proof positive that she must have seen it with the blind eye only, yet when I substituted my hand for the strong lens she was, according to her statement, absolutely in the dark. Without hesitation I gave the diagnosis to the father that the blindness was altogether imaginary, and that I would cure her.

He had made arrangements to remain one week in Baltimore, and he requested me to proceed slowly to bring about the desired change without letting his daughter know our suspicions. I prescribed a simple tonic pill to which I assigned the power of curing her without fail. She was to take one three times a day, and they would require just three days to effect the cure; moreover, they would do it suddenly when the seventy-two hours had expired—no sooner, no later. I desired to see her each day at the same hour, avowedly to watch progress, but chiefly for the purpose of fixing the impression on her mind that at the time appointed the lost sight would surely come back. At the end of the third day, in going through the usual trial with the test-types she despondently complained still of no sight whatever in the blind eye, although she had faithfully carried out the treatment. To her the outlook was as black and as blank as on the day of her arrival in Baltimore. I took out my watch, which I continued to keep in hand, and in a positive reassuring tone said: "There lack yet five minutes, and in that time you will surely have evidences of returning vision." She would frequently close the good eye, watching for the promised awakening. Suddenly she exclaimed that the light was coming, and in a minute afterward that she could, with this blind eye, distinguish objects in the room. Before she left my office on that day she read with this eye the finest print, and gave every evidence to her delighted father that she had perfectly regained sight in it. She seemed quite as much pleased with the restoration as was her parent. The miraculous cure was not only complete, but also was permanent. It was another illustration of the many "faith cures" made by physicians and others, and of the influence which a strong mind can have over a weaker one.

CURE OF MASTURBATION IN A WOMAN BY NEURECTOMY.

BY J. S. EASTMAN, A.M., M.D.,
OF BERKELEY, CAL.

EITHER from soreness of heart, disgust, or absolute despair, do we not too often neglect the unfortunate class of masturbators? We know full well that it is a habit that largely prevails, leaving in its wake a destruction of nerve-force and blasting lives. Having under my supervision one redeemed from the curse, built up from a tottering hopeless helplessness to a useful member of society, I am convinced that others can be similarly benefited.

A second reason for reporting this case is that I have been unable to find that any one has suggested an easier or more efficient relief than I offer. I further think my suggestion is in the line of conservative surgery, and may help to preserve the sex and spare the ovaries. Some of the most prominent gynecologists of New York assured me that clitoridectomy would be a perfect relief. Experts of San Francisco assured me that ovariotomy would bring the desired result. Many others of wide repute and experience did not even attempt a reply to my inquiry as to what might be best for such a desperate case.

My case was Miss A., twenty-six years of age, who came to me in September, 1890. Her hands were cold, covered with sweat, and she complained of sleeplessness at night. She was pale, haggard, and emaciated; she avoided society, had lost all interest in books, could not read with interest for five minutes. She was desperately dejected, and demanded relief. She had begun the habit at six years of age—one of the first things learned at public school. The indulgence was one or more times a week, and even as often as six times in one day. At the age of twenty years she had an opportunity to indulge in coition, and repeated it three or four times a week, but always without satisfaction, and generally with more or less pain. While she had the opportunity to have coition she still had sufficient control to enable her to resist self-abuse. When she could no longer practice coition without prostitution, she sought medical advice. Bromids and acid blistering were prescribed, and gave less contentment than an ordinary placebo. The next treatment was the placing of four silver-wire sutures through the labia majora, leaving the meatus urinarius free, and with the long curved ends of the silver wire pointing into the flesh, so that any manipulation would be painful, but still the habit prevailed. The electro-cautery was then applied to the parts, but unfortunately the resulting irritation aggravated the trouble, and she said the act was repeated fifteen times in one day. A council of numerous experts was then called. As her mother was an epileptic, and as the patient showed such symptoms as loss of memory, fainting-spells, and mild convulsions, it was decided to perform ovariectomy, from which she made a rapid and satisfactory recovery, without a single untoward symptom. A year rolled by, and all things seemed well, when the habit again returned as violently as before, and was indulged in both when awake and asleep. Then clitoridectomy was performed, and gave about three months' rest. But the symptoms grew worse than ever. She was now reduced in weight to ninety-eight pounds. She again returned to my office, and said she would gladly submit to any operation that promised relief. Almost in despair, fearing, as had been suggested, that her trouble was of central origin, I made another examination, and found her more sensitive on the left side of the vulva than the right. The fact suggested to me the desirability of a local paralysis. Accordingly, the following morning, in my office, the patient was placed under ether. I cut down upon the pudic nerve on the left side, and found the nerve very

considerably hypertrophied, and therefore very easily located. I dissected and removed about three inches of the nerve, sewed up the wound, and sent the patient home in her carriage. The wound healed promptly; the patient expressed herself as relieved from anxiety, and better in her general feeling than ever before. She has gained in weight from one to three pounds each month, until she now weighs 132 pounds instead of 98. She has become a great reader, enjoys company, sleeps well, and in every way seems restored to a normal condition. Many acquaintances have remarked how she has changed in manner, character, and looks, and she says: "the best of it all is I feel so much better."

Not only have all these desirable changes been wrought, but she has been absolutely free from her curse since the day the nerve was resected, which is now one year and a half ago. Of course, one case is not conclusive, but certain remarkable features of this case suggest the advisability of cutting out the nerve rather than the clitoris or ovaries, and it is certainly much the more simple operation.

CARCINOMA OF THE ESOPHAGUS.

By E. R. AXTELL, M.D.,
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Malignant disease of the esophagus is sufficiently rare to deserve more than passing notice. Of 9118 cases of carcinoma collected by Tanchon in 1851, only thirteen involved the esophagus. Mr. Butlin (London, 1882) collected but fifty-nine cases of carcinoma of the esophagus, while all records will hardly swell the number to two hundred cases. Yet carcinoma is far more frequent than any other variety of morbid growth in the esophagus, if not more frequent than any other form of esophageal disease.

In the following case the esophageal growth was primary; did not cause secondary infection, and was limited to the esophagus.

Joseph H., sixty years old, a married German laborer, gave a good family history; both patients lived to an old age and both died suddenly, the cause of death not being known. There was no history of carcinoma or of tuberculosis in the family. The patient's health was good throughout childhood and adult life.

In November, 1891, while eating an apple, the patient experienced a peculiar sense of constriction in the epigastrium, which continued thereafter. He was able to eat the apple and took solid food without inconvenience until February, 1892, when he found that he could no longer swallow solid food, even if masticated very finely. If the food were swallowed it would be ejected in two or three minutes, apparently not passing beyond the level of the larynx.

From that time he lived on liquid food. In September, 1892, he found that he had to take his liquid food in small quantities or else it would be thrown up.

He then began using the stomach-tube once a day and he thought that he was able to take a little more nourishment. On passing the tube he could feel it turn on itself. He was able, however, to wash out a quantity of "dirty water." Each day he had a small mushy stool.

The patient complained of a pronounced sense of weight, as though something were growing in the larynx. He had no cough, but at times a large amount of mucus would find its way into the throat and cause some inconvenience. He volunteered the information that he passed but little water, the quantity for three months not having been greater than six or eight ounces in twenty-four hours. Previous to this the amount passed had been fair. Examination of the urine showed a specific gravity of 1028, without albumin and sugar.

During the last year of life the patient lost forty-five pounds in weight, the greater part during the last three months. On physical examination a few moist râles were heard over both lungs. The heart-sounds were weak, but otherwise normal.

An ivory bougie, one-half inch in diameter, introduced into the esophagus, met with obstruction at a distance of twelve inches. A one-fourth inch bougie was also stopped at the same point.

On December 25, 1892, three weeks after the preceding examination, the patient died of asthenia. For a week before his death he was not able to retain any food at all.

The autopsy, made twenty-four hours later, revealed old adhesions over the lower lobe of the right lung. There was also some edema of both lungs. The right lung presented evidences of bronchitis. The heart and other organs of the body were normal.

One and one-half inches above the cardiac orifice of the stomach was found an annular tumor-mass in the walls of the esophagus, at no point more than two inches in vertical diameter. It was hard and nodular and almost completely closed the gullet. A fine probe could be pushed through the small opening without resistance. The mucous membrane over the growth was in a state of ulceration.

The tumor-mass was completely isolated. No secondary growths were found anywhere, and the bronchial glands were not enlarged.

The brain and the chord were not examined. Sections of the tumor-mass were made, and the growth proved to be a typical scirrhous carcinoma, with small spheroidal cells in the alveoli.

In this case there was no history of lancinating pain and no vomiting of blood.

The termination of the case occured one year and one month from the onset of the first symptom, and it was marked by progressive asthenia. No complications supervened.

Gastrostomy in a younger man might have been a useful operation. It was suggested to this patient and refused.

MEDICAL PROGRESS.

Acute Nephritis in the Newborn.—Frees (*Zeitschr. f. Geburtsh. u. Gynäkologie*, Bd. xxvi, H. 2, p. 426) has reported the case of a premature male child of a healthy primipara, in which three days after birth edema of the lower extremities developed, progressively increasing in intensity and extent. There was also jaundice. On the fifth day a cephalhematoma appeared upon the right parietal bone. There was no complication in connection with the umbilicus. The edema began to decline after

the seventh day, and was almost entirely gone by the tenth day. The jaundice at this time also began to disappear. Examination of the urine on the seventh day and subsequently showed that the quantity excreted was greatly diminished, and that albumin and hyaline, granular and epithelial tube-casts were present, together with red-blood corpuscles, renal epithelium, amorphous urates and detritus. The child manifested general apathy, refusing to take the breast, and losing decidedly in weight; the temperature remained subnormal throughout. On the twenty-sixth day improvement set in abruptly, the quantity of urine eliminated increasing, and the amount of albumin diminishing. The child rapidly gained in weight, and was soon perfectly well. It is thought probable that the condition was dependent upon undue irritation resulting from tardy solution of uric acid infarcts in a premature and feeble child. The urine of the mother was free from albumin before, during, and after labor.

Anuria for Eleven Days, with Recovery.—DURING (*Internationales Centralbl. f. die Physiol. u. Pathol. der Harn- u. Sexual-Organe*, B. iv, Heft 4, p. 181) has reported the case of a man, sixty years old, who had suffered for a number of years from gout and renal colic, the urine at times containing small calculi. On one occasion the man was seized with severe pain in the left loin and in the course of the left ureter. The testicle of the same side was retracted. A few drops of urine were passed from time to time at long intervals. There was also vomiting. From this time no urine was passed, despite the efforts of the patient. The bladder was found to be empty. Warm baths, douches, massage, and diuretics were employed, but without avail. On the third day uremic symptoms appeared: vomiting, eructations, somnolence, depression, restlesness, thirst, anorexia. In a short time copious diarrhea set in. On the eighth day the man's condition became alarming, the uremic symptoms becoming more pronounced. This condition continued until the eleventh day, when, while straining at stool, a large amount of bloody urine was passed by the urethra. The urine was not preserved and a possible calculus could not be looked for. During the first ten or eleven hours between twelve and fifteen quarts of urine were passed. The threatening symptoms at once subsided, and in the course of forty-eight hours the patient felt as well as usual.

Rupture of Tendon of Quadriceps Femoris: Tenorrhaphy.—KÖHL (*Corr.-bl. f. Schw. Aerzte*, 1893, No. 13, p. 454) has reported the case of a man who, in descending a declivity with a heavy weight upon his back, slipped and made a strenuous effort to maintain his equilibrium. In this he succeeded, but upon attempting to walk he found that he could not extend the right leg. The patella was in its proper place and movable laterally; on attempts at extension its relations were not changed. Above the patella a firm mass was appreciable; above this there existed a distinct depression, and a little beyond this there was a second resistant mass. It was recognized that the tendon of the quadriceps had been ruptured, and it was determined to expose the parts and suture the severed extremities. The rupture was found to be an irregular one, and to have taken place less than an inch above the attachment of the tendon to the patella. The proximal extremity contained three small cartilaginous nodules, which were removed. There was also one free nodule in the joint. After the extremities of the tendon had been sutured and drainage provided for, the wound was closed and the leg extended and encased in an immobile dressing. At the end of six weeks massage and flexion were instituted, and in a short time the man was able to resume his occupation, a slight impairment of flexion persisting.

Enteric Fever; Perforation; Recovery.—MCCALL (*British Medical Journal*, No. 1697, p. 62) reports the case of a woman, thirty-four years old, who, upon the sixteenth day of an attack of enteric fever, after eating half a dozen unripe plums surreptitiously obtained from a child, was seized with violent pain and vomiting and other evidences of collapse. The temperature fell to 97°, the extremities became cold, tympanites became marked, and death seemed imminent. Under stimulating treatment, including the application of warmth, the woman rallied and gradually improved. A considerable area of dulness formed in the cecal region and slight dulness in both flanks. On the twenty-second day the dulness over the cecum had become better defined, while that in the flanks was disappearing. Eleven days later fluctuation was detected in the midst of the cecal dulness, and poultices were applied until pointing took place. On the thirty-third day a small amount of matter was passed per rectum. Six days later eighteen ounces of badly smelling purulent fluid were withdrawn from the area of cecal dulness by means of an aspirator. After another interval of six days eight ounces more of pus were withdrawn. Thereafter convalescence set in, and perfect recovery ensued.

Epilepsy and Enteric Fever—LANNOIS (*Revue de Médecine*, No. 6, 1893, p. 492) has reported the case of a woman who had been paralyzed upon the right side from the age of eight months, and had had epileptiform seizures from the age of thirteen, when the paralysis became aggravated, and tremor appeared in the right lower extremity. During a protracted attack of phlegmonous erysipelas of the thigh the convulsive attacks remained in abeyance, while during a subsequent attack of enteric fever they recurred with increased frequency. That the mere elevation of temperature was not the real factor in the control of the paroxysms appears from the fact that it reached the same degree in both instances. It must, therefore, be concluded that the toxin of the streptococcus of erysipelas has a restraining influence upon the occurrence of epileptic attacks, while the toxin of the bacillus of enteric fever, on the contrary, rather favors the occurrence of the paroxysms.

A Coin in the Alimentary Canal for More than Nine Months.—KEARNEY (*Lancet*, No. 3644, p. 27) has reported the case of a child, a year and seven months old, who swallowed a copper coin about as large as a one-cent piece. A diet of boiled bread and porridge was recommended, but the coin was not passed. Four months later it became necessary to treat the child for bronchitis, the passage of the coin meanwhile not having been observed. At the expiration of more than nine months the coin was expelled, the child having been none the worse for the protracted lodgment of the foreign body.

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SATURDAY, AUGUST 12, 1893.

CHARAKA-SAMHITA.

IN these *fin de siècle* days it has become fashionable to affect to sneer at the mere suggestion of the possibility of there having been wisdom among the ancients. PUNDIT AVINASH CHANDRA KAVRITANA,[1] a member of a race that delights to trace its origins and find its exemplars in immemorial antiquity, has adopted the most effective means of answering and silencing such sneers, in the publication of an English translation—virile and idiomatic—of the oldest and most celebrated Hindu treatise on medicine. *Charaka-Samhita*, we should judge, bears much the same relation to the medicine of the East as the aphorisms of HIPPOCRATES do to that of the West. To the student of medical history the value of the work is inestimable; and the parts thus far published contain promise that there will likewise be some contributions of decided value to medical practice. As to this, however, we are not as yet prepared to express a more definite opinion. Certainly there are careful empiric observations, especially in the domain of materia medica, that deserve attention and investigation. While the hygienic rules are good and show that the ancient Hindu physicians were acquainted with much that passes for novel, yet they tell us nothing we do not already know. This detracts not from their historic value, but merely from their practical importance at the present day.

As is to be expected, we find among many wise and highly practical maxims others based upon superstitions of the time, local customs, or peculiar religious observances; but even our latest text-books cannot claim to be free from similar blemishes. How long is it since distinguished obstetricians practised and advised a most elaborate ritual, now happily almost obsolete, founded upon a superstitious, or, at least, irrational, awe of the microbe fetish?

Opening the work at random, we find among others illustrating a broad view of the fundamental principles of medicine, observations like these:

"Incurable diseases are . . . . of two kinds, those that are capable of being suppressed and those that have no treatment." "Even diseases that are incurable in consequence of the exhaustion of one's allotted period of life may be kept in a suppressed state by regulated diet and (proper) nursing."

Inseparable from the art of healing, in the ancient author's view, was the art of right living. But right living has not only a physical, but also a psychic aspect; and the psychic life is not only intellectual, but moral. Hence we find metaphysical analyses as well as elevating spiritual reflections and moral precepts intermingled with therapeutic and hygienic dicta. Again we cite at random:

"Emancipation can never be theirs whose minds are still stained by the faults of Passion and Darkness." "One should cherish emulation in respect of the causes of other persons' prosperity, but should never be jealous of that prosperity." "Keep the senses under subjugation." "One should wear every day clean and well-washed clothes; be always cheerful, and use agreeable perfumes." "One should bathe twice in the day, . . . always keep one's outlets (for urine and excrement) and one's feet perfectly clean and well washed." "One should constitute one's self the friend of all creatures, ... pacify the angry, reassure the frightened, redress the woes of the distressed." "The absence of harmony in respect of the ingredient humors (of the body) is disease; for their harmony constitutes our normal condition."

The subject of materia medica is extensively considered. Six hundred purgatives, five orders of astringents, remedies for vomiting and hiccough, agents that alter the color and consistency of feces, increase or diminish the excretion of urine, promote or allay sweating, etc., etc., are enumerated and classified. The editor gives in foot-notes the modern names of the plants specified. Much attention is paid to inhalation of the fumes of certain

[1] Editor of Chikitsa-Sammilani (Medical Journal in Bengali), Practitioner of the Hindu System of Medicine, etc., etc.

medicaments; thus there are described smokes for the nose and the throat, smokes for purging, etc. The directions as to the method of inhalation are precise, and failure is ascribed to departure from the proper routine. The subjects of heredity and re-incarnation are discussed from both theologic and medical standpoints. The work is published by subscription in fascicules,[1] of which five have thus far been issued. The rapidity of issue will depend upon the encouragement received by the editor. It is proposed to issue twelve parts yearly until the work is completed. As it is a substantial contribution not only to the history of medical literature, but also to the history of human progress in many departments of thought and knowledge, we trust that the subscriptions will be sufficiently numerous to insure the speedy completion of the publication. For ourselves we gladly acknowledge our debt to MR. KAVRITANA for the enlightenment and pleasure which we have gained from the pages his industry and enthusiasm have placed before us.

MOTOR AGRAPHIA.

SINCE Broca demonstrated the localization of the center governing the function of speech in the third frontal convolution of the left cerebral hemisphere, the most marked advances have been made in cerebral localization, and we may add, also, in spinal localization as well; but with this, however, we do not at the present moment wish to deal. Not only have centers been isolated that control the functions of different parts of the body, but it has been shown that the defect variously described as alalia, aphemia, or aphasia is a most complex one, constituted of numerous diverse elements, and in its relations not restricted to lesions of the left third frontal convolution. These lesions are responsible for the motor form of aphasia, the patient preserving the faculties of ideation and comprehension, but being unable to revive the motor mechanism of expression. If the power of expression in spoken language be at fault, the defect is termed aphemia; if the power of expression in written language, agraphia; if the power of expression by signs or gestures, amimia. Lesions of the auditory center in the adjacent first temporo-sphenoidal convolution and of the visual center in the angular gyrus occasion sensory aphasia. In addition, there may be impairment of the memory of words—amnesic aphasia. In conjunction with sensory aphasia there is likely to be an inability to recognize spoken words—word-deafness; or to distinguish sounds at all—mind-deafness; or an inability to recognize printed or written words—word-blindness (alexia); or to comprehend the significance of signs or gestures—apraxia; or to recognize objects at all—mind-blindness. These defects may be variously associated, with the result of giving great complexity to the clinical picture. Thus, in a case of word-blindness, the patient is equally unable to read and to write, either spontaneously or from dictation, or to transcribe. In another instance, he may be unable to write spontaneously, but may be able to transcribe. In this way we may have a sensory and a motor agraphia. CHARCOT and DUTIL (*Comptes rendus hebdomadaires des Séances de la Société de Biologie*, No. 24, 1893, p. 130) have recently reported a case that would seem to demonstrate that in addition to agraphia of sensory origin, resulting from a lesion of the visual center or in the path of the fibers connecting this center with the motor center for the upper extremity, there may be a motor form of agraphia which bears the same relation to written language that logoplegia bears to spoken language. The case was that of a woman in which, after an attack of right hemiplegia, with paralysis of the tongue, at the age of forty-four years, the ability to write spontaneously and from dictation was lost, although the ability to transcribe was preserved. There was neither word-blindness nor word-deafness. At the age of fifty-five, left hemiplegia took place, with complete loss of speech. A third and a fourth attack occurred at the age of sixty-one, and death took place at sixty-nine. At the post-mortem examination areas of softening were found in the cortex of the left central hemisphere, (1) at the posterior extremity of the second frontal convolution, and (2) in the middle portion of the second frontal; upon the right side, (3) at the anterior extremity of the third frontal and the posterior portion of the third frontal, extending into the ascending frontal; and (4) at the foot of the ascending frontal and ascending parietal; and (5) in the posterior portion of the ascending parietal. Two additional areas of softening were found at the base of the right hemisphere. The last and the third were thought to have given rise to no symptoms; the second and fourth to have caused the symptoms of pseudo-bulbar palsy that had been present; the fifth the paresis of the

[1] D. C. Dass & Co., 200 Cornwallis Street, Calcutta, India. Price, per part, 1 rupee: in advance, for the whole work, £3, post free.

left side of the body; while the peculiar form of agraphia was ascribed to the lesion at the posterior portion of the left second frontal convolution, where it is assumed the center for the coördination of the movements concerned in writing is situated. In the discussion that followed the presentation of the report, DEJERINE pointed out the difficulty of isolating and localizing a purely motor agraphia in the presence of a lesion of the motor speech-center, and of reconciling the hypothetic existence of a center for writing with the fact that this function may be performed by the feet as well as by the hands. The second objection does not appear to be a real one, for it can be conceived that the motor center for writing may be a higher one connected with the lower centers for the hand and the foot, either of which may govern the peripheral mechanism of the act of writing. The subject is a most intricate as it is a most interesting one, and much careful observation and thorough study will be required for its elucidation.

EDITORIAL COMMENTS.

Signing Medical Testimonials.—Not long ago the enterprising manufacturer of a much-advertised disinfectant sent around among the physicians of Philadelphia an attractive young woman, who asked for signatures to a certificate of the virtues of this particular article. To further her appeal, she exhibited a list of those who had already signed the testimonial. This list was a singular collection of names—illustrious and insignificant, regular and homeopath (another point of resemblance for a former President of the Philadelphia County Medical Society), writers and teachers of various degrees of fame or notoriousness, large-appearing men who need sign nothing, and little men—proud, perhaps, to sign anything—together, alas! with a number of editors of medical journals.

All these men, a curious and inquisitive examiner discovered, certified that "from an experience of many years in hospital, private, and household use," they were convinced that this so-called disinfectant "possesses most completely within itself *all* the *radical and essential elements required for complete disinfection!*" And, naturally, they "heartily indorse and commend its use, not only to the profession, but to the public in general."

But what they certify to is false. Neither this odorless deodorizer and colorless decolorizer nor any other like preparation fulfils the conditions of the testimonial referred to. Many a gallon of it is, by medical sanction, wasted in sprinkling sheets hung across doors behind which contagious diseases are at work, or stands uselessly in saucers in rooms where disease-germs are holding carnival. But everybody who knows what every medical adviser ought to know, knows that no disinfectant whatever can act at a distance, that no "ides" or "ines" of any kind can kill a germ unless its head is held under it; that stories of aërial disinfection belong to a class of fables that it is not prudent to tell to enlightened men and not quite honest to tell to those who confide the care of their health to us.

There are those who, thinking of these things, decline to sign such false and foolish testimonials as the one referred to. But those who sign—why do they do it?

The Relation of Wealth to Health.—Mr. Marcus T. Reynolds is the author of the prize essay of the American Economic Association on "The Housing of the Poor in American cities." It is a work full of instruction, and inspired by the noblest spirit. From it we learn the unexpected fact that the death-rate of the tenement-house population of New York is slightly lower than that of the remaining population of the city, or, in other words, that the death-rate is highest in the houses containing the fewest inhabitants. It seems that the death-rate of persons of five years of age and over decreases with the increase in the number of tenants, while the death-rate of children under five years increases until there are more than eighty tenants to a house, after which it decreases. The explanation of Mr. Reynolds is that the tenants of the larger houses are under closer sanitary inspection, and also that the removal thence of the sick to hospitals is more frequent. He suggests, too, as a possible reason for the lower death-rate of "the poorer classes," that "they pass much of their lives out of doors, and when indoors live in rooms without carpets or papered walls to catch and propagate microörganisms, with bare floors that are washed frequently."

"The Union for Public Good," of Baltimore, is an organization that deserves both success and imitators. Its scope may be considered rather large, but its *raison d'être* consists in the truth of the old saw that what is everybody's business is nobody's business. There are thousands of abuses and injuries to the public health in every city that go on because it is nobody's business to call attention to them or to try to make headway against them. When the Englishman is offended at something of the sort he grumbles, writes to the *Times*, and then—the nuisance goes on as before. The purpose of the Baltimore society is to promote the good government, health, and prosperity of the city, etc. In short, it is a general grievance committee, which proposes to remedy public moral and physical pathogenic tendencies and habits, so far as they affect the public health and well-being. The medical profession is well represented in the association, and certainly has by its aid an excellent opportunity to make effective many measures of sanitation and preventve medicine.

Increase of Insanity and Pulmonary Tuberculosis Among the Negroes of the South.—The responsibilities and struggles of the Southern negro resulting from his sudden manumission are sadly affecting his health. According to Dr. Powell, superintendent of the Georgia State Asylum, there are now over a thousand insane negroes in Georgia, while thirty years ago there were but forty-five. Greater accuracy in reporting cases doubtless explains only a part of the increase, but Dr. Powell attributes about 75 per cent. of the insanity directly or indirectly to the use of alcoholic liquors, which the slave

could not get. Hence is again illustrated the old truth, that there may be too much freedom. As to pulmonary tuberculosis, Dr. Hubbard, of Nashville, Tenn., shows by the health-reports of six Southern cities that the mortality from this disease is four times as great as among the whites.

The Temperance Education Movement has for its object the utilization of the public schools as means of teaching physiologic temperance. The movement deserves all praise, and is evidently slowly securing the success that comes from an intellectual and determined grappling with the sources of evil. It is said that the study is legally made mandatory in every public school in thirty-six of forty-four States, and in every school under Federal control. The want hitherto of the requisite text-books, information, and systematization concerning the study has so far been a serious drawback. But next year a volume for teachers is to be issued, entitled *Normal Studies in Physiological Temperance*, and a series of monthly advices is now issued with the title of "Scientific Temperance," under the superintendency of Mrs. Mary H. Hunt, of Hyde Park, Mass.

A Pan-American Pharmacopeia is proposed by the officers of the Section on Materia Medica and Pharmacology of the Pan-American Medical Congress. This is a healthy movement, and should receive hearty professional support. All great sciences tend to unity, and especially as to their instruments and methods. The pharmacopeia is a body of rules and methods that should be uniform for all physicians. It is a pity that different nations should not have a common pharmacopeia, and this attempt to amalgamate and unify the pharmaceutic and pharmacologic sciences and practices of the American people should enlist the coöperation of those who attend the Congress. The President of the Section is Prof. Joseph P. Remington, and the Secretary is Prof. F. G. Ryan, No. 3739 Brown Street, Philadelphia, to whom communications may be addressed.

Tracts for the Prevention of Tuberculosis for Gratuitous Distribution are now offered by the Pennsylvania Society for the Prevention of Tuberculosis (E. Leslie Gilliams, 727 Walnut Street, Secretary), Philadelphia. These tracts are written in common technical language, so that the laity can understand them, and physicians should make themselves local distributing agents for scattering among the community the knowledge of the simple and highly-important means of preventing the spread of the "king of diseases." Membership in the society costs only one dollar.

Charity-organization.—All who are interested in charity-organization, the proper distribution and use of alms, the sanitary improvement of the poor, the proper relations of the hospitals to the community, etc., should procure a copy of the Fifteenth Annual Report of the Charity Organization Society of Buffalo, N. Y., a pamphlet that shows what noble efforts are being made and what splendid success is being achieved in the special fields chosen. Every city should have such a society, and physicians should be leaders in the movement.

SOCIETY PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, held at Long Branch, N. J., July 25, 26, and 27, 1893.

FIRST DAY—JULY 25TH.

The President's Address was delivered by DR. HENRY M. LYMAN, of Chicago. He called attention to the predisposing causes of diseases of the nervous system, and said that the simple recognition of disease is not sufficient; etiologic classification is also necessary. He then dwelt upon the subject of rheumatism affecting the nervous system, the marked forms of which, chiefly affecting sensation, are not so commonly recognized and are frequently ascribed to other causes. They are usually observed in elderly persons of nervous temperament and arthritic diathesis, and differ from many other similar disorders of sensation in being transient, migratory, and of brief duration. Among these ailments is a prickling of the surface of the skin, often universal, but sometimes limited to certain points, where the patient experiences a sudden sharp prick, like a flea-bite. Another disorder of cutaneous sensation often affects the scalp, and is occasioned by irritation of the superficial nerves of that region. The duration of the attack rarely exceeds a single day. Closely associated with these disorders are the various transient perversions of sensation that may be felt in the Eustachian tubes, the pharynx, and about the fauces. Another of the symptoms of masked rheumatism is a peculiar and disagreeable feeling in the tongue. This sometimes assumes the severity of a genuine neuralgia, and manifests a greater degree of persistence when associated with obesity, diabetes, or gout than when related to rheumatism alone. The esophagus and fauces and sometimes the muscles of the eyeballs are similarly affected. Often there is a paroxysmal cough, associated with headache. The most distressing of all these forms of pain is gastralgia. The previous history and the concurrence of other rheumatic symptoms of a more stable character will, of course, add greatly to the certainty of the diagnosis.

DR. SMITH BAKER, of Utica, read a paper entitled "Heterogeneous Personality," which he defined as that condition in which the characteristics of ancestry are not blended into a permanent whole. He reported the case of a little girl who presented frequently recurring attacks of functional perversions and distress, which could not be satisfactorily explained except upon the inference that the dissimilar traits noticeable in her grandparents had not been blended in the personality of her mother and so had proved to be the ground-field of the grandchild's affection. The question as to the legitimacy of such a view can never be answered intelligently until the commoner facts of family life shall have been more minutely studied. Thus, such trite matters as dreams, somnambulism, the solving of problems unconsciously, or subconsciously, the up-rush of facts and arguments in the act of composition, and the play of genius, should be investigated.

Inquiries in states of acute illness, and the study of moods and transformations of character, etc., all

should receive more attention by physicians in order that causation in cases of functional derangement may be the more accurately conceived. In doing this, assistance may be found in many instances of so-called reflex disease. Heterogeneous personality should always be looked for in the neuropathic constitution; but more particularly is this of use in considering the problems presented by neurasthenia and the sexual perversions. Not so frequently, perhaps, is the trouble owing to the commonly assumed overwork, etc., as to the unceasing warfare within between the "lower" impulse and the "higher" determination. Students, professional men, and many others whose physical abnormities or mental peculiarities reveal the sensitive, easily impressed nature, are especially prone to be victims of the uncoalesced personality. Its bearing upon questions of marriage and parentage renders it worthy the attention of all.

Dr. Lyons, of New York, referred to the opposite sides of character as seen among the insane. An educated woman may be agreeable and lovable in her normal condition, but vicious when in the abnormal state. The case of a patient was related who would frequently apologize and do her utmost to resist the impulses to do wrong. The opinion was expressed that such behavior might be due to abnormity in the development of the cerebral hemispheres or to some interference with the circulation.

Dr. Parsons, of Sing Sing, expressed the view that the tendency to evil thinking and acting observed in some persons might be overcome by suitable environment. The absence of restraint, after a time, permits of a continuance or permanency of the abnormal condition.

Dr. Hinsdale, of Philadelphia, spoke of two authenticated cases of double-consciousness. He maintained that the medico-legal features of such cases, as well as those of changes in personality, are of special interest and should be reported and carefully analyzed.

Dr. Seguin, of New York, held that atavism is the more rational explanation. Blending of the characteristics of ancestors occurs normally. It is not right to confuse double-consciousness of an epileptic nature with conflicts of character and personality.

Dr. J. J. Putnam, of Boston, said that the treatment rested upon the systematic development of character. Hypnotism has taught much in regard to this condition, and brings out in a striking manner certain phases of character. He recommended the development of the inhibitory powers.

Dr. F. X. Dercum, of Philadelphia, stated that the case reported by Dr. Baker recalled the fact that there is lower vitality at certain epochs in women. Relationships between states of health might account for the peculiar mental variations.

Dr. Baker referred to the various definitions of personality as not being sufficiently inclusive of the facts to be of accurate use. He urged the importance of the study of the subject, especially in its bearing not only upon the causation of actual disease, but in its relation to educational ideas and practices as found to-day in our school-system. In this way may be found means of obviating detrimental traits, and also of making dominant those more desirable and healthful.

Dr. Matthew D. Field, of New York, read a paper entitled "Detention-Hospitals for the Insane." After speaking of the wrongs inflicted upon the insane by committing them to county jails and prisons, there to mingle with tramps while awaiting the appointing of physicians to pronounce upon their mental condition, he gave a description of the Reception Pavilion for the Insane at Bellevue Hospital, and the methods of examination and commitment by the city examiners. He declared the pavilion to be in every respect a hospital, with resident physicians and competent trained attendants. Though a plain and inexpensive building, it served its purpose very well. He advocated the establishment in all large cities of similar hospitals for the reception of those suspected of lunacy. He said that an ideal institution for this purpose would be a hospital constructed on the pavilion-plan for the reception of the insane, inebriate, and neurotic, with a small amphitheater and sufficient wards for proper classification and detention for a reasonable time. A competent visiting, resident, and examining staff of medical officers should be chosen and clinical instruction regularly given. Such a hospital would secure prompt, humane, and scientific treatment. The opportunity for longer observation, securing histories and examinations, would result in more complete and accurate certification. There being no need for hasty transfer to other institutions, the feeble, sick, and certain selected cases could be detained for treatment, and clinical instruction would be easily accessible to the entire medical profession.

Dr. Knapp, of Boston, said that there are no detention-hospitals in Boston, and that no urgent need for them has been felt under existing laws. A few emergency cases requiring immediate restraint are admitted to the general hospitals. Otherwise they can be taken at once to the nearest asylum on emergency certificates. These consist of two separate certificates. A bond must be given by the superintendent, or one of the physicians, to the effect that the patient is to be formally committed, or released within five days. This system has proved eminently satisfactory, and has rarely been abused.

Dr. Mills, of Philadelphia, stated that the method described by Dr. Field is in vogue at the Philadelphia Hospital. There is a detention-ward for isolating cases of insanity. Two physicians are assigned to examine these patients before commitment. This ward has also been used for several years for clinical instruction.

Dr. Preston, of Baltimore, remarked that the lunacy laws of Maryland are inadequate. Endeavors are being made to establish a detention-ward. At present insane patients are kept at police-stations, as no general hospital is prepared to receive them. This method of dealing is entirely unsatisfactory.

The President said that in Chicago there is a detention-ward in the City Hospital in which cases of insanity are kept until transferred. The commitment laws of Illinois are now quite satisfactory.

Dr. Frederick Peterson, of New York, read a paper upon "The Temperature in General Paralysis of the Insane," which was based upon observations, made with the assistance of Dr. Langdon, on twenty-five cases in the wards of the Hudson River State Hospital for the Insane. The temperature was taken every two hours for one week in each case, and in ten cases in the two axillæ simultaneously from every two to four hours for a week.

It was found that the average bodily temperature corresponded with physiologic norms. The diurnal oscillations also corresponded to physiologic norms. Asymmetric axillary differences were so small that they could not be considered as abnormal, and certainly not of any diagnostic significance.

When unusual variations of temperature occur in general paretics, the cause must be sought for in conditions not related to the pathologic phenomena, but depending upon other thermogenic features unrecognized by the physician, or "masked" by the mental state of the patient. Thus, in one case an increasing hyperpyrexia was noted during the seoond week, but the pneumonia causing it was "masked" until the fifth or sixth day, the patient dying on the sixth day. In another case, in which the highest single daily oscillation was 3.4°, and the average daily oscillations for the week 2.2° Fahr., the patient had bedsores on the sacrum and heels, and was undoubtedly septicemic. That the temperature might vary in the paralytic seizures of these cases was not gainsaid, no observations having been taken in such conditions.

DR. GRAY, of New York, said that a large number of different pathologic conditions are often included under the name of general paresis. Some represent the terminal stages of intra-cranial syphilis.

DR. CHARLES K. MILLS, of Philadelphia, said that the diversity of the manifestations of general paresis will account for the different experience of various observers.

DR. JOSEPH COLLINS, of New York, read a paper entitled "The Anatomical Changes in the Spinal Cord in an Old Case of Infantile Paralysis," demonstrating numerous sections and reporting the history of a case.

DR. G. M. HAMMOND, of New York, read a paper on "Progressive Muscular Atrophy." He exhibited microscopic specimens and made a pathologic report of two cases, and referred to the fact that considerable confusion is occasioned by the misapplication of the term "peroneal type" to a disease totally dissimilar to the one under consideration.

The first patient was a woman, forty-six years old, without a history of gout, rheumatism, or syphilis, who, a few days after stumbling over a chair and bruising the right shin slightly, was unable to walk as well as previously. In a little while marked weakness of the flexors of the foot and the extensors of the toes developed. In the course of a year there was complete paralysis of the entire right leg, with reaction of degeneration, loss of power, and of electric contractility in the anterior tibial muscles of the left leg, and atrophy and loss of power in the thenar and hypothenar muscles of the right hand. Gradually but rapidly the other extremities became involved, and ultimately the abdominal and intercostal muscles were affected. Death took place suddenly from either cardiac or respiratory paralysis.

The sections of the cord showed sclerosis of the pyramidal tracts and atrophy of cells in the anterior horns, and degeneration of Gowers' column throughout its entire extent. The conclusion to be drawn from the clinico-pathologic study of this case is that the muscles of the hand were supplied from the mesial group, and the muscles of the forearm from the anterior group of cells in the anterior horn.

In the second case the disease only affected the muscles of the left thumb. The patient was under observation for eleven years. The case ran the usual course, and was in every way typical. At the time of death all of the muscles from the level of the armpits upward, except the facial muscles, were atrophied, as well as those of the upper extremities. The woman became maniacal, and finally died from exhaustion.

The cord and medulla were examined, and the changes were identical with those described in the preceding case.

The conclusion was reached that these cases demonstrate that progressive muscular atrophy is due to a degeneration of the cells in the anterior gray masses and the antero-lateral white columns; also, that it is superfluous to divide progressive muscular atrophy into different types, because the disease does not invariably begin in the same group of muscles.

DR. SACHS said that while there could be no doubt that the Aran-Duchenne type is of spinal origin, it is not certain that the case of Dr. Hammond represented the peroneal form of progressive muscular atrophy as described by Charcot, Tooth, Hoffman, and himself. If the case were such a one, the findings in the spinal cord would have been of great importance. There is yet doubt whether the peroneal form represents a spinal disease or a peripheral affection.

DR. PUTNAM referred to a case of progressive muscular atrophy in an adult in which there was rapid destruction of gray matter throughout the cord. Despite the violence of the process, portions of the anterior and lateral cell-groups were preserved.

DR. F. X. DERCUM, of Philadelphia, read a paper entitled "Optic Neuritis, Blindness, Deafness, and the Knee-jerk in Cerebellar Disease." He said that many of the symptoms of cerebellar disease are both inconstant and variable. They are difficult of explanation and frequently impossible to correlate.

Seven cases were reported in which optic neuritis, blindness, deafness, and modifications of the knee-jerks were present.

It is a matter of common experience that high grades of neuritis may exist without marked impairment of vision. It seems, therefore, that the added symptom of blindness gives a special significance to the optic neuritis found in these cases. It appears that if for any reason optic neuritis is present in cerebellar disease, it is likely to be intense in degree, and sooner or later associated with total blindness.

The proximity of the quadrigeminal bodies has naturally suggested itself as in some way explaining this blindness. The ataxia and titubation at once suggest disease of the vermiform process. Anatomic considerations, as well as the results of the autopsy in one of the cases, show that if a growth be situated in the vermiform process, especially anteriorly, and if the growth continue to enlarge, it will sooner or later press upon the superior cerebellar peduncles and very probably upon the quadrigeminal bodies themselves. If the relation of the fibers of the optic tract to the primary optic centers be recalled, it can readily be understood how a neuritis should result if pressure or irritation occur at this point. The directness of the irritation will explain why the neuritis should be of a high grade, and, sooner or later, associated with total blindness.

The deafness present in some cases of cerebellar tumor may perhaps be explained in a similar manner. The studies of Spitzka, Monakow, and others, have made it extremely probable that the posterior quadrigeminal bodies stand in the same relation to the auditory fibers as do the anterior to the optic fibers. It would simply be necessary, therefore, that the pressure involve these structures in order that deafness should be a symptom.

The condition of the knee-jerk presents a problem of peculiar difficulty. The loss of knee-jerk in disease of the cerebellum may be ascribed to loss of muscle-tonus.

It is extremely probable that lesions of the cerebellum act as do lesions elsewhere, in one of two ways, *i. e.*, either by destroying tissue, and thus destroying function, or by causing irritation. It is, perhaps, in this way that the fact can be accounted for that in some cases of cerebellar disease the knee-jerk is absent and in others present or even exaggerated.

When the disease was advanced there was loss of reflex action to light.

DR. PUTNAM spoke of a case of long-standing optic atrophy, with practically no other symptom. Although the optic neuritis persisted for two years, the autopsy showed a cyst and tumor of the cerebellum.

DR. PRESTON said that he had noted loss of the muscular sense in two patients. In four cases the knee-jerks were irregular, disappearing and occasionally returning.

DR. KNAPP said that in all of his cases confirmed by autopsy there was neuritis or optic atrophy. In one case in which a cerebellar tumor was suspected, neuritis had not developed. Blindness had not been so constant. In another case the light-reflex was lost when the pupils became dilated. Pressure on the corpora quadrigemina is most likely to produce blindness. Dr. Knapp has never noted deafness. He considered untenable the view that disease of the middle lobe of the cerebellum is responsible for the ataxic gait.

DR. LESZYNSKY, of New York, expressed the view that the concomitant basal meningitis has much to do with the production of the optic neuritis, by extension of the inflammatory process along the nerve-sheath. In many cases the neuritis is a late symptom. When the neuritis or optic atrophy is accompanied by loss of light-perception, the pupillary reflex is always absent.

DR. C. L. WALTON, of Boston, read a paper entitled "A New Method for the Reduction of Dislocation of the Cervical Vertebræ." In illustration of the method, let it be supposed that the left articular process of one vertebra has slipped forward over that of the vertebra below, and has fallen into the depression anterior to the articular process. This bends the head to the left, and turns the face to the right. The reduction is accomplished by extending the head diagonally backward to the right, so as to elevate the articular process, after which rotation to the left replaces the displaced vertebra. The transverse processes on the right act as a fulcrum. The ligaments that hold the vertebra firmly in the false position make no opposition to this maneuver, which requires no force.

In bilateral dislocation the same movements should be made, first on one side, then on the other.

SECOND DAY—JULY 26TH.

DR. C. L. DANA, of New York, read a paper entitled "Akromegaly, Gigantism, and Facial Hemihypertrophy." He related the history of a case of akromegaly with autopsy, and that of a case of gigantism or somatomegaly with some symptoms of akromegaly. The giant had a unilateral facial hypertrophy. The first case was in a full-blooded Bolivian Indian who was exhibited as a giant. He was thirty years old, 6 feet 7 inches high, and weighed 300 pounds. The malar and frontal bones were enormously developed. The thorax measured 50 inches in circumference. Death took place suddenly. On autopsy, the brain was found normal, weighing 55 ounces. The pituitary gland was greatly enlarged, measuring 1 inch in diameter. The thyroid gland weighed 4 ounces. The feet and hands had increased in circumferential measurements. The brain presented interesting peculiarities of fissuration.

The second case was in a professional giant, nineteeen years old, 7 feet 5 inches tall, and weighing 350 pounds, whose muscular development was feeble and who presented several symptoms resembling those of akromegaly. A most curious condition was a progressive unilateral facial hypertrophy, due mainly to osseous growth. It suggested akromegaly attacking only half of one extremity. Only eleven cases of this affection are on record.

Dr. Dana said that akromegaly is sometimes associated with gigantism. He held that many so-called giants are instances of pathologic growth rather than excessive physiologic development.

There is much evidence to show that the pituitary gland has some relation to these disorders. Among twelve autopsies, this gland was found enlarged in ten.

DR. DERCUM said that akromegaly is not associated with increase in the length of bones but in their width. He regarded Dr. Dana's case as one of gigantism with akromegaly superadded.

DR. GRAY said that it is a question whether akromegaly and gigantism are not identical. The pathology of akromegaly is not yet clear.

DR. COLLINS held that akromegaly and gigantism are two separate diseases. In gigantism the changes are in the cellular structure of the diaphyses and epiphyses, principally the former. In akromegaly the changes are confined to the epiphyses. Probably the disease of the pituitary gland stands in a causative relation to akromegaly. Giants may suffer from akromegaly, which is a degenerative disease.

DR. PUTNAM said that he has seen temporary improvement in one case from the administration of thyroid extract.

DR. SACHS expressed the opinion that akromegaly and gigantism are related. Gigantism is a form of physiologic excess, while akromegaly is a distinct morbid condition.

DR. WEBER, of New York, had seen two cases. One had symptoms of myxedema. He was inclined to believe gigantism to be excessive physiologic growth.

DR. MILLS related that he has, after death, found a tumor destroying the pituitary gland in a case in which during life there has been no akromegaly.

DR. J. J. PUTNAM, of Boston, read a paper entitled

"Thyroidectomy in the Treatment of Graves' Disease." After calling attention to the fact that this procedure has been carried out some forty times, mainly by German surgeons, with but two deaths and a very large percentage of cures or improvements, he narrated the case of a young woman suffering from a typical form of Graves' disease, of nine months' standing and with a rather large goiter. The right lobe and most of the isthmus were removed. During and after the operation the patient's pulse ran up very high, and for several days she lay in an extremely prostrated, and apparently critical condition. She then rallied, and at the end of six months her condition was decidely better than before the operation, though far from being cured. The remaining portion of the tumor did not shrink and showed a marked tendency to vascular enlargement. The voice was reduced to a whisper immediately after the operation, but subsequently nearly recovered its natural tone.

The reasonableness of the operation lies in the fact that in Graves' disease certain nervous centers are in a state of extreme irritability. Any means that will cut off a considerable number of excitations from reaching the unstable centers is likely to be beneficial by securing for them a partial physiologic rest. There are various means, such as complete rest, the treatment of the nasopharynx, etc., that may do this in a measure, but no one means is so effectual as thyroidectomy. The operation is, however, attended with a slight risk of death, and with a greater risk of considerable temporary prostration and laryngeal paresis.

DR. WEBER said that he has noted recovery in a patient possessing all of the characteristic symptoms, under the persistent use of potassium iodid. The dose was gradually increased to three drams daily.

DR. B. SACHS, of New York, read a paper entitled "Tabes and Syphilis." In support of the close relationship between syphilis and tabes he pointed out the frequent occurrence of general paresis in association with tabes, and of tabes in the course of general paresis; the occurrence of symptoms in the course of tabes that are often due to syphilis; the ocular palsies; the loss of pupillary reflexes and even the lightning-pains; the effect of treatment with mercurials and iodids upon many of the symptoms of tabes.

A clinical differentiation of cases of tabes which are due to an active syphilitic process was attempted. Among such cases were included those that exhibit complete loss of reflex contractility of one or both pupils, and ocular palsies. A case of typical tabes was reported *in extenso*, in which on post-mortem examination a more recent syphilitic process was found superimposed upon an old typical sclerosis. It was pointed out that the spinal sclerosis may result from degeneration brought about by syphilitic disease of the bloodvessels of the cord. Altered states of the blood may be the prime cause of changes in the bloodvessels.

DR. PRESTON maintained that the syphilitic process is an arterio-sclerosis. Rarely is there hyperplasia of neuroglia without changes in the cells or nerve-fibers. The tabetic process probably begins in the bloodvessels. Traumatism seems to be an important etiologic factor. Improvement and relief of pain have followed the use of nitro-glycerin.

DR. MILLS stated that preceding the development of the sclerosis there may be leptomeningitis and disease of the vessels, which if attacked early might be relieved or removed, but the sclerosis once established, recovery becomes impossible. Posterior sclerosis often advances at intervals by jumps, and these may sometimes be coincident with or may follow the revival of active syphilitic processes.

DR. PARSONS referred to two cases of syphilis, followed by insanity and the subsequent development of spinal symptoms.

DR. SEGUIN stated that he still adheres to the idea that syphilis is only a predisposing cause for the groundwork of tabes. Certain cases occur that are undoubtedly free from any history or evidence of syphilis.

DR. KNAPP mentioned a case of primary syphilis superadded to tabes of two or three years' standing.

DR. WM. C. KRAUSS, of Buffalo, exhibited a new pedodynamometer. The apparatus consisted of a wide, heavy belt, with its inner surface padded, so that its adjustment around the waist will not be uncomfortable. A heavy webbing is looped through the belt, passing over the shoulders and helping to retain the belt in position. A common dynamometer is connected with the belt by means of a strong adjustable strap, permitting it to be lengthened or shortened, according to the stature of the patient. Connected with the dynamometer is a stirrup, the base of which is padded for receiving the foot. Pressure exerted upon the stirrup will be registered upon the dial of the dynamometer and the exact strength of the extensors of the leg can thus be ascertained. The apparatus can be applied either in the standing or in the recumbent posture. The leg should be flexed at the knee at an angle of about 90°. To determine the strength of the calf-muscles the strap should be lengthened and the foot flexed upon the leg.

DR. JAMES H. LLOYD and DR. DAVID RIESMAN, of Philadelphia, presented a joint communication entitled "Infectious Endocarditis with General Septicemia, Complicated with Multiple Neuritis," founded upon the report of two cases.

The first occurred in a man with a typhoid type of fever which had continued for three months, and was complicated with multiple neuritis. The diagnosis of typhoid fever was excluded. The neuritis was irregularly distributed. The patient gradually developed an aortic regurgitant murmur, with a water-hammer pulse. Later, a purpuric eruption appeared. A diagnosis was made of infectious endocarditis, with secondary septic neuritis. At the post-mortem examination immense vegetations were found on the aortic valves, with infarcts in the spleen and in one kidney. Sections of the spinal cord and nerves were shown, exhibiting slight posterior sclerosis of the cord and extensive inflammation of the nerves.

The second case, also in a man, simulated typhoid fever, with yellow-colored stools. At the post-mortem examination multiple abscesses in the brain, a large embolus in the left brachial artery, and an infarct in one kidney were found, togther with a giant-growth of vegetations as large as a pullet's egg attached to the inner coat of the aorta, overhanging the orifices of the innominate, carotid, and subclavian arteries.

DR. C. L. WALTON, of Boston, read a paper entitled "Tumor of the Angular Gyrus," in which he detailed

the history of a case presenting temporal and occipital headache, vomiting, paralysis of the left abducens, double optic neuritis, hemianopsia, word-blindness, aphasia, and word-deafness. An operation was attempted, but the tumor proved too large and diffuse for removal, extending into the temporal, occipital, and parietal regions. The patient lived two months, with comparative relief from pressure-symptoms, including the abducens paralysis. Toward the end the right hand and arm became somewhat paretic. Examination showed the growth to be a glioma.

Dr. Seguin suggested that the ocular symptoms were probably not due so much to lesion of the angular gyrus as to involvement of the fibers of the fasciculus opticus which lie immediately under it.

Dr. E. D. Fisher, of New York, read a paper entitled "Congenital Cerebral Hemiplegia, with Autopsy." He detailed the history of a case presenting complete right hemiplegia, with marked atrophy, exaggerated reflexes, epilepsy, and imbecility. The cranial measurements showed morbid deficiency in the binauricular diameter and facial length. At the autopsy the left central hemisphere was found much atrophied. The right cerebellar hemisphere was also atrophied. The microscopic specimens showed a decrease in the number of cortical cells, but those present were not much diminished in size. There was some loss of acuteness of the angles of the cells, but little pigmentary or granular changes. The cord was but slightly affected.

Dr. Charles K. Mills, of Philadelphia, read a paper entitled "Lesion of the Thalamus and Internal Capsule." The patient had an apoplectic attack in 1877, and died in 1892. The symptomatology of the case included hemianesthesia; paresis with contractures not marked; inability to recognize the position of the affected limbs. Hemianopsia and all affections of the special senses were absent, as were also athetoid and choreoid movements. The autopsy disclosed a hemorrhagic cyst, which had destroyed about two-thirds of the substance of the thalamus, including the entire external tubercle and a large portion of the pulvinar. The anterior extremity and the internal and inferior surfaces of the thalamus were intact. The lesion had to a slight extent invaded the posterior arm of the capsule.

Dr. Wharton Sinkler, of Philadelphia, read a paper entitled "Tumor of the Optic Thalamus," and presented a specimen. He reported the case of an unmarried woman, forty-six years old, who, previously in excellent health, first noticed somnolence and loss of mental vigor. Her manner became indifferent and listless. A little later there was some aphasia, and later still paresis of the right side of the face, unsteadiness of gait, and awkwardness in the use of the right hand. When first seen there was marked paralysis and partial anesthesia of the right side of the face, but no impairment of sensation of the arm or leg. There was decided mental hebetude, but no loss of memory. The woman could not walk on account of unsteadiness. The knee-jerks were exaggerated. The temperature was subnormal and the pulse varied from 48 to 60. The pupils reacted to light and in accommodation. There was no nystagmus or hemianopsia, and no change in the fundus oculi.

The symptoms increased in severity, the temperature rose rapidly, and the patient died. There had been no convulsions.

The post-mortem showed the left optic thalamus to be the seat of a growth as large as a hen's egg, which encroached upon the corpus striatum and posterior part of the internal capsule. The tumor has not been examined microscopically, but is probably a fibroma.

The points of interest are the hysterical symptoms that were present at the onset; the fact that the anesthesia was confined to the face; and the question that arose as to the possibility of operation.

Dr. Dana referred to two cases, one with tumor and another with softening in the thalamic region, in both of which somnolence was a prominent symptom. This phenomenon is characteristic when the posterior portion of the optic thalamus and the neighborhood of the corpora quadrigemina are involved.

Dr. Seguin reported a case with a probable tumor in the thalamic region, with somnolence, which was increased by the use of potassium iodid.

Dr. Dana said that he is familiar with a case in which the iodid acted as a hypnotic.

Dr. Gray said that he has noticed the iodid to produce somnolence in a case of cerebro-spinal meningitis.

Dr. Sinkler added that in his case the somnolence diminished after the administration of the iodid.

Dr. George J. Preston, of Baltimore, read a paper entitled "The Localizing Value of Aphasia." He related two cases of hemianopsia, one with autopsy, in which there was no word-blindness, as might have been expected. A case of mixed aphasia was related and the brain exhibited. The case showed absolute motor aphasia, together with word-blindness, and yet the lesion was confined to the third frontal convolution, the occipital cortex showing no disease. A case was reported in which there was a general disturbance of speech, with distinct mental symptoms; the patient at times being maniacal. Upon the strength of the general disturbance of the speech-processes the skull was trephined over Broca's region, and the under surface of the dura found covered with blood.

Dr. Leonard Weber, of New York, presented a paper entitled "Spinal Neurasthenia." He objected to any single plan of treatment as too much routine, and not likely to be of permanent service to the patient, while a proper combination of well-known methods based upon careful individualization is likely to be of greater benefit.

In the grave forms of neurasthenia caused by mental and physical overwork, the prognosis thus far has not been good, even as to relative recovery. If the reports can be trusted, it would seem that hypnotic suggestion constitutes a remedy of extraordinary power in some of these cases.

The history was related of some cases of severe neurasthenia brought about by protracted mercurial inunction, and another caused by prolonged daily use of small doses of Carlsbad salts. Both recovered at the end of about a year.

Third Day—July 27th.

Dr. Wm. C. Krause, of Buffalo, read a paper entitled "Observations in a Case of Myxedema." He reported a case of myxedema in a woman, fifty-three years

old, whose mother was afflicted with symptoms similar to the patient's. The patient had always been in good health up to her forty-sixth year, although she had never perspired, and the secretions, as the saliva, nasal mucus, and the milk, were always scanty. Following upon an accident, her face, body, and extremities became swollen, her hair suddenly disappeared from all parts of the body, and she suffered with severe pains, especially through the temples, and a tired feeling incapacitating her for all kinds of manual labor. She further complained of a feeling of coldness, even in midsummer. Her hands were dry, harsh, and scaly, her face waxy, and her eyes puffy and swollen. Her temperature ranged from 95.4° F. to 97.4° F. Her pulse, soft, regular, and uniform, varied from 81 to 88 per minute. The edema-like swelling did not pit on pressure. The urine was normal and did not contain albumin at any time. The only drug that acted beneficially was ferric chlorid.

Thyroid glands of sheep were given for six weeks, but no improvement whatever appeared to follow. Another case, seen in consultation, treated with desiccated thyroids, also manifested no improvement.

DR. PHILLIP COOMBS KNAPP, of Boston, read a paper entitled "Simulation in Traumatic Nervous Diseases." He said that although many persons will simulate disease if it be to their advantage, successful simulation of the various traumatic nervous affections is rare.

Non-traumatic hysteria and neurasthenia present many symptoms that appear counterfeit, the victims of these diseases often being accused of pretending to be ill, when really the malady is a serious one.

Contraction of the visual field, anesthesia, tremor, disturbances of the reflexes, circulatory disturbances, and Mannkopf's symptoms are to be regarded as important objective signs. Few simulators have intelligence enough to withstand a searching examination by a skilled neurologist.

Furthermore, a person can keep his attention fixed on any subject only for a very brief time, and if he must be prepared to defend his simulation of half a dozen different symptoms he will inevitably be tripped up by unexpected tests applied when his attention is diverted.

Three cases were cited in which the defence claimed that there was simulation, but in every case objective evidence proved the reality of the disease.

Of fifty cases in which claims for damages had been made, only two could be regarded as simulating, and few as exaggerating, and in most of these there was little reason to suspect any deliberate attempt at fraud.

DR. MILLS maintained that absolute simulation is very infrequent. The cumulative exaggeration of symptoms, however, is comparatively frequent. A few persons can simulate a type of insanity or a traumatic neurosis, but cannot easily simulate all of the symptoms and signs.

DR. GRAY said that many cases supposed to be simulating are simply offering to the trained eye symptoms indicative of possible simulation. He related a case of traumatic neurasthenia cured by $\frac{1}{125}$ grain of atropine taken for two days.

DR. LLOYD held that the symptoms of traumatic neurasthenia are nothing but the inter-paroxysmal symptoms of hysteria. Because a person develops hysteria after an accident there is no reason to believe that he must be a simulator.

DR. SEGUIN exhibited a specimen stained with a 1 to 2000 solution of nigrosin, a method that he used many years ago, but neglected to publish. One of the advantages is that specimens may be safely left in the solution for twenty-four hours.

DR. C. L. DANA, of New York, read a paper entitled "The Microbic Origin of Chorea, with a Case." He reported the case of a man, twenty-six years old, who had had chorea from the age of fifteen, the attacks appearing exactly like those of ordinary chorea. At first there were intermissions, but the disease finally became chronic. The spasmodic movements were general and violent. There was no heart-disease or rheumatism.

The patient died from exhaustion. The post-mortem examination showed microscopically a conspicuous chronic lepto-meningitis involving the vertex of the brain. Microscopically this was found to be mainly a proliferation-process, without exudation or much cell-infiltration. In the superficial layer of the cortex there were cellular infiltration and degenerative changes. At this point diplococci were found. The microörganisms were found only in the deep layer of the pia and the superficial part of the cortex.

In addition, there were found peculiar hyaline bodies in the three outer layers of the cortex and less numerously in the basal ganglia. There were evidences of meningeal irritation, vascular disease (arteritis), and nerve-root irritation in the medulla and upper part of the cord. The lower part of the cord was not examined.

The following named gentlemen were elected to active membership: Dr. Brower, of Chicago; Dr. Burr, of Philadelphia; and Dr. Diller, of Pittsburg. Dr. Arnold Pick, of Prague was, elected an associate member.

The following papers were read by title: "The Genesis of Hallucination, Illusion, and Delusion," by Dr. H. A. Tomlinson, of St. Peter, Minn. "The Diagnosis of General Paresis," by Dr. L. C. Gray, of New York. "A Report of Two Cases of Friedreich's Disease," by Dr. Frank R. Fry, of St. Louis. "The Metapore or Foramen of Magendie in Man and in the Orang," by Dr. Burt G. Wilder, of Ithaca. "Observations on the Relation of Chorea to Rheumatism," by Dr. Eugene Riggs, of St. Paul. "Experiences in the Use of Testiculin and Cerebrin," by Dr. J. J. Putnam, of Boston. "Peripheral Paralysis after Surgical Operations," by Dr. V. P. Gibney, of New York. "Traumatic Brachial Plexus Paralysis in Infants," by Dr. Wm. M. Leszynsky, of New York.

The officers elected for the ensuing year were: President, Dr. B. Sachs, of New York; Vice-Presidents, Dr. F. X. Dercum, of Philadelphia, and Dr. P. C. Knapp, of Boston; Secretary and Treasurer, Dr. G. M. Hammond, of New York; Councillors, Dr. E. C. Seguin, of New York, and Dr. J. H. Lloyd, of Philadelphia.

BRITISH MEDICAL ASSOCIATION.[1]

Sixty-first Annual Meeting, held at Newcastle-upon-Tyne, August 1, 2, 3, and 4, 1893.

FIRST DAY—AUGUST 1ST.

DR. GEORGE HARE PHILIPSON delivered the President's Address. He expressed his appreciation of the

[1] From advance proof-sheets kindly furnished by *The British Medical Journal.*

distinction conferred in being made President of the Association, and offered a hearty and cordial welcome.

The Association had previously met in Newcastle in the year 1870. In the interval of time it has greatly increased in numbers, power, and influence. At the annual meeting in 1870, 320 members attended, and the Association numbered 4258. Now it has on its roll 14,700 members. The proportion of British members of the profession who are not yet members of the Association is a steadily decreasing minority. The Association may fairly claim to have brought about for the profession throughout the British Empire the federation which still remains the dream of the politician. Medicine, happily, knows no frontiers, except such as are erected by diversity of language. Members of the Association are to be found in every quarter of the globe, and there are now but few British dominions, colonies, or dependencies in which a branch of the Association does not exist.

At the Newcastle meeting in 1870, Mr. Ernest Hart was reappointed the editor of the *British Medical Journal*. The power and ability, high professional tone, and ministerial direction which he has displayed in its conduction must be apparent to every member of the Association. The weekly issue, in the interval of nearly a quarter of a century, has been increased from 2000 to 17,500. On such a satisfactory result Mr. Hart is to be heartily congratulated. By his editorial work he has largely contributed to advance the well-being of the nation, to promote the best interests of the medical profession, and to increase the good feeling of its members.

Consideration was given to matters connected with Newcastle, historic and otherwise. The city has two institutions of a collegiate nature—the College of Medicine and the College of Science, both being colleges of the University of Durham. As early as 1834 classes were established in Newcastle for the study of medicine. In 1852 the School of Medicine was received into connection with the University of Durham, and in 1870 the affiliation was rendered more complete by the school becoming a college of the University. The lecturers of the College are officers of the University in the Faculty of Medicine, and the students are undergraduates of the same faculty. In the present College, which was opened in 1889, every modern improvement has been adopted, whereby the medical education and the well-being of the students can be furthered. In the College Calendar for 1893 the list of students is 262.

In the University of Durham, in the academic year of 1892–93, 145 degrees in medicine, surgery, and hygiene were conferred. The University was the first of the examining bodies of the United Kingdom to institute a practical examination in anatomy and chemistry, and a clinical examination in medicine and surgery for degrees in medicine and surgery. It was also the first University in England to grant degrees in hygiene. A professorship of comparative pathology has been recently founded by the University in the College of Medicine, the endowment for which was generously bequeathed by the late Dr. George Yeoman Heath, Professor of Surgery and President of the College of Medicine. Thus, through the foresight and munificence of one of its most illustrious professors, the University has become the pioneer of a new branch of medical education.

The medical institutions in Newcastle are numerous and well supported. The Royal Infirmary, established in the year 1751 for the counties of Newcastle-upon-Tyne, Northumberland, and Durham, from time to time has undergone additions, and at the present time has accommodation for 280 in-patients. The particular interest of this institution is that it exhibits the changes that have taken place in hospital-construction and arrangement during the past 150 years. Efforts are being made to obtain a new infirmary. The Newcastle Dispensary, founded in the year 1777, was the second of the kind in the provinces. The first systematic returns of the sickness of the borough appeared in its annual reports. The City Hospital for Infectious Diseases, situated at Walker, built on the single-story-pavilion system, with a disunited administrative block, is available for 100 patients. The Prudhoe Memorial Convalescent Home, at Whitby-by-the-Sea, arranged on the pavilion plan for 160 patients, was erected by public subscription in memory of Duke Algernon of Northumberland. There are also the following special hospitals: The Fleming Memorial for Sick Children, the Eye Infirmary, the Hospital for Diseases of the Chest, the Hospital for Diseases of the Throat and Ear, the Hospital for Diseases of the Skin, and the Hospital for Incurables.

The diseases that may be considered to be associated with the occupations peculiar to the locality demand a short notice. In the three northern counties of Northumberland, Durham, and Cumberland, it is estimated that about 120,000 people are employed about coal-mines. To the heated atmosphere of the coal-mine, an atmosphere often laden with dust, and to the strain thrown upon the internal organs caused by the cramped position in which miners are obliged to work, the mucous catarrhs of the respiratory and gastro-intestinal tracts, from which miners suffer, may be attributed. But there are few diseases peculiar to miners.

Anthracosis is very rare. Emphysema of the lungs does occasionally occur. The pitman's asthma is well known, but it is a much less frequent disorder now than formerly. Miners are also very exempt from nephritis, which may be attributed to the profuse perspiration which they experience while at work and to the daily ablution which they practise on their return home. Contrary to what might be expected from the violent muscular exertions necessary to hewing, and from working frequently in wet and damp places, and always more or less in currents of air, rheumatism and rheumatic fever rarely affect the coal-miner. The explanation of the exemption is the same as that given respecting nephritis. The miners of the North of England have an average of three years longer life than the aggregate of Englishmen, eight years longer than the Cornish miner, nine years longer than the South Wales miner, and only one year less than that of the men of the healthiest districts of the kingdom.

The frequent occurrence of diseases of the cardio-vascular and nervous systems is to be noted. The workers in iron, particularly the puddlers and strikers, are prone to suffer from diseases of the heart and aorta, owing to the strain thrown upon the bloodvessels. From the records of the Newcastle-upon-Tyne Royal Infirmary for the past five years of all the medical cases, 15 per cent. were of diseases of the circulatory system, and

of this number 15.6 per cent. were cases of disease of the large vessels; the pathologic changes observed were dilatation and hypertrophy of the ventricles, with incompetence of the aortic valves; and 17 per cent. were of diseases of the nervous system.

There are large lead-works on the Tyne, both of white and red lead, and the Royal Infirmary is rarely without several cases of lead-poisoning. It is observed that the women suffer much more than the men; the records of the Royal Infirmary show twice the number of women to men, as it is the former who are employed in handling and stacking the carbonate of lead. The carbonate of lead when introduced into the system by inhalation or otherwise mixes freely with the fluids, and causes a toxemia followed by convulsions, and a fatal coma termed "lead-encephalopathy." As death under these circumstances has been rapidly induced, no marked structural change is detected in the internal organs. In the more chronic cases the effects of lead-poisoning are found in structural alteration of the heart and kidneys, and central and peripheral changes in the nervous system; and lead has been found in the internal organs upon necropsy. As to the remedy for this state of things, the subject requires the most careful investigation in the interests alike of the employer and the employed.

Asiatic cholera, described as such, has been epidemic in Newcastle upon three occasions. The first visitation occurred in 1831–32, causing 322 deaths; the second in 1848–49, with 412 deaths; and the third in 1853, with 1533 deaths. The water supplied to Newcastle in 1832 and in 1853 was polluted, and in 1849 was uncontaminated. In 1849 the mortality in proportion to the population was seven times less than in 1832 and 1853.

Respecting the threatening of cholera in England in the autumn of 1892, in September, one sailor from Hamburg arrived in the Tyne suffering from the disease. He was removed to the floating hospital at Jarrow-on-Tyne, and died. There was no spread of the infection. This may be fairly attributed to the strenuous action of the Tyne Port Sanitary Authority, guided by its medical officer.

The present water of the Newcastle and Gateshead Water Company is good in quality, and is filtered before being delivered. The reservoirs of the company are capable of holding 1,827,000,000 gallons.

Few towns in the kingdom have increased in their population with the present generation as Newcastle has done. In the year 1871 the population was over 128,000, being an increase in ten years of 15 per cent.; in the year 1881 over 145,000, an increase of 11.6 per cent.; and in 1891 over 186,000, an increase of 28.2 per cent. In the census of 1891, Newcastle is exceeded in its increase only by Cardiff, which is 55.7 per cent.

Of the deaths registered in Newcastle from all causes in the ten years 1871–80, the average rate of mortality was 25.8, and in the ten years 1881–90, 23.6, a diminution of 2.2, and during the same decades, of the seven chief zymotic diseases, there was a diminution of 1.6.

Questions relating to State medicine were also taken up, especial consideration being given to the subjects of the notification of diseases, the pollution of rivers, lunacy legislation, and other matters of public health. A plea was made for a Minister of Public Health.

SECOND DAY—AUGUST 2D.

DR. DAVID DRUMMOND delivered the Address in Medicine. His subject was entitled "Causal Relations in Disease." He entered upon a consideration of some prominent morbid relations and the deductions therefrom.

To the question why etiology and treatment have lagged far behind diagnosis in the scientific race, notwithstanding the substantial impetus given by the labors of explorers in the microcosm of disease, it may be answered that it is perhaps from an insufficient consideration of the possible end to which this great principle of causation may lead, and also from a too great proneness to multiply causes unnecessarily, and at times flippantly against the protests of science and philosophy. A hint might with advantage be taken from the chapter of modern experimental pathologists, and the demonstration aimed at, that a disease can be referred with more justice to one definite cause than to several, each credited with its *pro rata* share of statistical responsibility. It will no doubt be objected that no matter how desirable such a demonstration may be, our present knowledge does not admit of it. But even if this be so, an attempt at least should be made to differentiate morbid conditions that may, by their close symptomatic resemblance to each other, be confounded, and to refer each to its proper cause.

The divergence of opinion that exists in reference to the true causal factor of some diseases may, in a measure, be due to the employment of terms that do not convey precisely the same meaning to all who use or read them. Hence, naturally, ensues a confusion that will gradually disappear as the reference or reduction of morbid conditions to their true and definite cause or origin comes to be prescribed as an ideal to be realized more and more fully with the progress of knowledge. The employment of this method will eventually lead up to the formation of a nomenclature which, in addition to being strictly accurate, may prove of immense therapeutic and diagnostic value, and guard against the mistakes incident to the habit of giving to a group of symptoms or a pathologic condition a name that may indicate a discoverer, but does not indicate the nature or origin of the disease.

An apt illustration is furnished by those numerous and seemingly distinct lesions of skin, eyes, brain, joints, lungs, etc., which aforetime were regarded as separate entities, but which are now known to have one causal factor in common, the bacillus of tubercle, linking all together. Thus the study of tubercle grows in importance as its circle of causal relations widens, and each new fact in its life-history or its manner of decay throws more light upon this great clinical family.

The persistent attempt to reduce morbid conditions to a single cause will have a material and beneficial bearing upon the method of treatment. It is agreed that a cure to be effectual must reach the root of the disease. Once let assurance be given that the true origin has been discovered, and the proper treatment, if adopted early in a remediable case, may reasonably be expected to be successful.

Another advantage to be reaped from the recognition of unal causation in morbid relations is its diagnostic

help, for if the patient's symptoms point in the direction of a possible disease which, in the experience of the practitioner, is commonly preceded by a definite causal factor, and he can assure himself of the presence of this factor, then the evidence is strengthened and the diagnosis materially confirmed. To the objection that the number of cases of striking morbid affinities are too few to be of any practical value in this direction, it may be replied that the bond of union between certain associated lesions is being daily more recognized, and that the circle of causal relations is ever widening so as to include an increasing number of diseases.

Dr. Drummond then proceeded to examine a few of the more prominent morbid conditions whose claim to belong to the category of diseases having a constant cause is pressing. In this class he included the relation between syphilis and locomotor ataxy, which from his experience he believes to be constant. He regards, and has long taught accordingly, locomotor ataxy as invariably the result of antecedent syphilis, and that (some statistics notwithstanding) where the former is found it may be declared with a feeling of absolute certainty that there has been at a previous date the latter, to which this locomotor ataxy is in some manner due.

Another disease that is to be ascribed to the same specific factor is general paralysis of the insane. Here the burden of proof is attended with still greater difficulties to the statistician, who has in many instances to deal with patients whom Nature, in robbing of past memories, has deprived of the ability, if they possessed the will, to furnish a true record. And, further, there is a larger proportion of women amongst general paralytics than amongst tabetic cases—a fact that lends an additional complication to the case. Notwithstanding these obstacles Jacobson has recently declared that at least 65 per cent. of the cases are specific, and years ago Steenberg and others contended for the unal theory, namely, that there was "no general paralysis without syphilis."

The importance of adopting this view, if it be correct, can scarcely be overestimated, for it will surely clear the way for a reliable diagnosis if it can with confidence be said that, in eliminating syphilis in a mental case one is practically excluding general paralysis—a factor that may turn the balance when, as often happens, one is compelled to catch at diagnostic straws. If further evidence were required in support of the theory of the constant connection between syphilis and general paralysis of the insane, over and above that furnished by statistics and interpreted in the light of the inductive method of reasoning, it is to be found in the fact that this disease is virtually the only progressive mental disease known to be associated with a definite and recognizable anatomic lesion. This fact alone justifies an opinion in favor of a special causation, for it singles out the disease, and seems to warrant the conclusion that, as a definite pathologic process has been at work, so has there also been a special etiologic factor.

It may be rash in the light of past failures to predict much therapeutic benefit from the recognition of the cause in the instances cited, but may it not be fairly asked: Might not the results have been different had the remedies been applied earlier? For it will not be straining to an unreasonable extent our knowledge of "specific" lesions to suggest that preceding and underlying the morbid changes of the nature of sclerotic degeneration with which all pathologists are familiar, and which, as is known, have defied our remedies, there is a stage of specific myelitis and neuritis that tends to run an extremely chronic and insidious course, and may be most difficult to recognize clinically, unless perchance a timely warning be given by a ptosis or a diplopia, etc., when the administration of suitable remedies might be expected to yield a good result. How many cases of locomotor ataxy and general paralysis have been prevented by the timely use of anti-syphilitic remedies, when at the outset a clue is forthcoming, it is impossible to say.

Dr. Drummond laid yet another sweeping accusation to the charge of this many-headed hydra, the extent of whose subtle and baneful influence seems scarcely yet realized. For many years he has been deeply interested in the study of the connection between syphilis and aneurism, and in common with others has been struck with the frequency with which the former occupied a prominent place in the history of a sacculated aneurism. The inquiry has been pursued with special care, with the result that since the commencement of the investigation no indisputable case has come under notice in which specific disease was wanting, excepting two or three examples of that interesting condition, acute softening of the arterial wall, with aneurismal bulging, in malignant endocarditis. In order to emphasize this statement it was pointed out that the observations applied to a part of the country in which aneurism is an exceedingly common disease; during the past ten years 145 cases of aneurism of the thoracic aorta have been treated in the wards of the Royal Infirmary.

No attempt was made to establish the specific character of the aneurismal process, and it was not denied that sacculated arterial bulging to the extent worthy of the name of aneurism may occur in conditions other than those due to syphilis of the arterial coats; but it was suggested that there is something special in this form of arteritis that renders the affected part of the vessel peculiarly liable to yield to pressure. It may be that the involvement of the middle and outer coats, and their transformation into fibrous tissue, so common in syphilis, will account for this liability; and it has been found a good practical rule not to diagnosticate aneurism in a doubtful case in the absence of syphilis—a rule that must be more or less limited in its application, as it necessarily presupposes an accurate history. Arterial strain through hard work, is of course, a factor in the production of aneurism, but it is one that in the vast majority of instances requires to be multiplied by specific arteritis in order that the product be aneurism, and then it is the lesser quantity of the two.

The causal relation of pneumonia to empyema, one of the closest if not the most constant, the latest textbooks notwithstanding, is another exemplification of the subject. True there are cases of pus in the pleural cavity that have not arisen out of an attack of pleuro-pneumonia, due possibly to an acute septic pleurisy, or to tuberculous pneumothorax, or as the result of a simple effusion becoming contaminated by septic matter, say by means of a trocar, but these are exceptions. Exclude them, and it may fairly be concluded that empyema, the common disease with which practitioners

are so familiar, may be ascribed to an antecedent pneumonia. It is of the greatest moment to recognize an empyema as early as possible, for the sooner the pus is evacuated the shorter will be the surgical treatment of the case, and the better the prospect of permanent recovery; and, further, if taken very early, a single tapping without incision and drainage may effect a cure. Now the diagnosis of these cases turns largely upon the discovery of the pneumonic factor; in other words, familiarity with the fact that effusion following pneumonia is very likely to be purulent furnishes a clue to diagnosis.

Few subjects have excited more interest than the relation between rheumatism and chorea, and none has occasioned greater divergence of opinion. The discrepancy relates chiefly to the question of degree, for nearly all allow a certain affinity between the two diseases. If it be admitted that a certain proportion of cases of chorea are associated with rheumatism, the inquiry naturally divides itself into two parts, the nature and extent of the relationship. Clinical observation indicates that in a certain proportion of cases, at least, chorea is simply one manifestation of the disturbance by the rheumatic poison of the function of somewhat unstable and growing cortical cells; and if this conception be tenable in a few instances, may it not be extended so as to include the whole of the familiar group of typical choreic cases so common among the children of nervous and rheumatic families, and prone to yield to large doses of arsenic? The study of cardiac lesions throws into relief the importance of tracing diseases to their true causes. They are all referable to primary conditions—rheumatism, gout, specific fevers, tuberculosis, sepsis, alcoholic excess, syphilis, etc.—which are singularly fruitful in morbid products. These conditions constitute a formidable list, to which additions are constantly being made, and each is responsible for heart-affections having more or less characteristic clinical and pathologic features. The immense importance of investigating cardiac diseases upon the basis of their antecedent and underlying morbid states cannot be overestimated, for the treatment and prognosis depend largely upon the particular agent at work. The same remark holds good in the case of lesions of other organs, a fact that in many instances has been fully recognized; but, its application in heart-disease is perhaps more than ordinarily conspicuous. It has been the habit of the schools to attach too much value to the diagnosis of the particular valve-lesion, and too little to its cause. Thus, for example, we content ourselves with the shallow and often unimportant observation that this or that case is one of mitral regurgitation or double aortic disease, a diagnostic shibboleth that any novice may apply; forgetful that what is of paramount importance is not only the primary reason for the existence of the lesion, but also the cause upon which the symptoms belonging to any subsequent attack of cardiac failure may depend. Thus the inquiry would necessarily embrace the questions, in the case of toxemic lesions—gouty, rheumatic, alcoholic, etc.: Is the poison still circulating? and what is the prospect of its return? Difficult and at present more or less problematic are these questions, but to them we must direct our attention before we can hope to prognosticate and treat heart-disease successfully.

An attack of rheumatism may damage a valve and leave behind a permanent legacy, but how innocuous that structural change may be, so far as the health of the patient is concerned, so long as his real enemy—rheumatic poison—remains absent, is well known to all practitioners. For there can be no doubt that the injured endocardium is very likely to suffer further damage under the influence of fresh rheumatic attacks, however slight. It is these intercurrent rheumatic accessions, often subtle and unattended by any outward manifestation beyond fever, that are fraught with so much risk. So, also, is the case of gouty mischief, but here the causal factor is more constant and insidious in its operations, and its ravages are too often deeply rooted before they are recognized, a fact that should lead to greater diligence in unearthing a latency so dangerous.

In syphilis we have a much more common cause of heart-disease than the text-books admit, and surely a morbid agent that might be met and treated if recognized at the outset; but how seldom has the attempt been made, though specific arterio-sclerosis is an obvious pathologic entity.

The varieties of alcoholic heart-disease are now receiving attention, and, with increasing clinical and pathologic information, it is to be hoped that fewer mistakes in prognosis will be made; for often the alcoholic heart fails suddenly, giving rise to an unexpected catastrophe, despite the most favorable prognosis, because the mischief, being rather of the myocardium than of the valves, has remained undetected.

Careful attention to these etiologic circumstances will often enable us to help the poor cardiac backslider in a more substantial way than if we simply consider his defective machinery and treat his more pressing wants, regarding the intercurrent attacks as natural and unavoidable incidents in the course of the disorder. It has at times been possible to demonstrate in the post-mortem room that the valve-lesion from which the patient had suffered was due to a chronic tuberculosis of the pericardium resulting in general adhesions, and that the valves supposed to be diseased were in themselves healthy, though the orifices were dilated and the myocardium degenerated. Obviously the treatment and prognosis of such a case must differ from the treatment and prognosis of cardiac failure from pericardial adhesions, or of a heart damaged in early life by scarlatinal valvulitis and broken down by excessive work, or of a rheumatic case marked by returning and often protracted pyrexial attacks, or of an insufficiency directly due to alcohol.

A substantial reduction in the number of chronic heart-cases, as the result of the recognition of the fact that many are due to curable and preventable causes, which an early and successful treatment might reasonably be expected to subdue, would not be a dream too visionary for us to indulge in; but assuredly until the causes are fully appreciated, a dream it will remain.

It would be difficult to select a better illustration of the benefits that have arisen from the influence exercised by the view that the true or ultimate causes underlying diseased states are, in the botanic sense, solitary, and that the paths along which they travel are comparatively few and well-beaten, than the knowledge that guides advanced surgeons in their dealing with suppurative peritonitis—the knowledge, namely, that these cases always result from infection of the peritoneum with pus-

microbes. Pathologists have helped their surgical friends to give a practical turn to this fact by recognizing that the infective microbes gain an entrance either by perforation of a viscus — ulcerated appendix, bowel, or stomach — or the rupture of a puerperal abscess, a generalization that serves a useful turn in practice, though scientifically speaking it may not be quite accurate.

An extension of this line of thought cannot fail to bring conviction that the nosologic tables hardly contain the name of a systemic disease that is not simply the reflection of some primary morbid state with which we are more or less familiar. Many of these, it is true, are known only as subtle influences, but they are becoming rapidly less shadowy, and before long it is to be hoped that the bright light begotten of the fierce competition and zealous spirit of work so characteristic of the present day will reveal their true nature. At present, like light itself, they are not understood, and are scarcely discernible, until by falling upon some organ with whose form and functions we are familiar, they are reflected to the eye of our understanding.

Consideration was given to some possibilities in the modifying or controlling influence exercised by one disease upon another.

The proposition was made that familiar clinical pictures of disease of an organ are often the product of the symptoms peculiar to it, and of others which are the expression of impaired function of another organ. In other words, the full symptom-complex of disease of one organ may be largely contributed to by disease of another, whether produced by the same or some other cause. For instance, a patient addicted to alcoholic excess for a considerable number of years is known to be suffering from a group of dyspeptic symptoms, ascribed by the patient, friends, and doctor to this cause, but without a suspicion of gross organic mischief underlying them. This state of health interfered but slightly with the discharge of public and private duties, and indeed, beyond loss of flesh and some discomfort, there was a complete absence of signs of disease. An attack of pneumonia, which tried his powers of endurance considerably and was followed by a slow convalescence, completely altered the character of the case. Within a fortnight or three weeks of the incidence of the pulmonary disorder the abdomen swelled and its superficial veins enlarged, the lips became red and the tongue glazed and red, the face pinched and the urine scanty and full of urates, the motions black, and in every way a most suggestive picture of cirrhosis of the liver was presented, a transformation that astonished the doctor and friends, and was not at first sight easily explained. The only reasonable assumption to account for the apparently rapid delevopment of cirrhosis of the liver was that the disease had existed for a considerable period in a latent form, and that the obstructed portal circulation was compensated for by the usual auxiliary relief, which served to reduce congestion, and thus keep in check the tendency to ascites, etc., until the attack of pneumonia, by producing cardiac insufficiency, upset the balance, and led to the appearance of the typical signs hitherto absent. Though the pathologic changes characteristic of cirrhosis were present, the clinical aspect of the case was incomplete until a new and necessary factor, which had nothing to do with the original disorder, revealed the true nature of the illness. It seems a just inference that the cardiac affection made an important, if not essential, contribution to the completion of the symptoms picture. There is reason to think that in cirrhosis of the liver generally the occurrence of the abdominal dropsy largely depends upon the supervention of heart weakness. It is not unusual for the dropsy of chronic nephritis to be determined by heart-weakness.

It is not enough to say that clinical pictures may be the joint products of symptomatic morbid relations, for they are often presented under the modifying influence of a tendency or bias, lent by a former or a concurrent disease; that is to say, it is quite common to meet with pronounced modifications in the clinical pictures of disease which can only be accounted for on the principle that one disease has a determining influence upon the aspect of another. Thus, a young man, aged twenty-two, suffered in the autumn of 1891 from an attack of alcoholic paralysis which revealed itself in the usual form of weakness in the legs, flapping of the feet in walking, with, eventually, ankle-drop and paralysis, and paresis of the extensors of the fingers, along with which were severe myalgic pains. He recovered satisfactorily, and at the end of four months he was able to walk, and a little later to ride his bicycle. In May of the following year he had an attack of diphtheria, and in a few weeks, while strictly temperate, he developed, without any defect of sight or impairment of swallowing, numbness and weakness of the legs and hands, and indeed a very similar condition to that which had existed previously, except that the pains were absent. In this case the diphtheric palsy was exhibited in a somewhat unusual form, in consequence of a predisposition to a special paralytic distribution lent by an attack of alcoholic neuritis. Cases of diphtheric paralysis are met with in which the lower extremities bear the brunt of the poison, but it is exceptional to meet with so pronounced a paraplegia in the entire absence of the usual signs, such as failure of accommodation, dysphagia, etc.

In another instance a man in the prime of life, who was much addicted to alcohol, came under observation for complete double wrist-drop, presenting every feature of a plumbic case. His history revealed the fact that twelve years previously he had suffered from lead-palsy, with blue line, the result of drinking contaminated water, and as he was recovering he acquired intemperate habits, and developed into a chronic toper. The consequence was that the paralysis of the extensors became more pronounced, and remained permanent. There was absolutely no paralysis of the lower extremities, and the knee-jerk was normal.

The modifying influence of one lesion upon another may be, as it is well known, decidedly beneficial. Thus, sarcoma and lupus may yield to the poison of erysipelas; of which fact, it is reasonable to suppose, more will be made in the immediate future.

The controlling effect of disease on disease is also to be seen in the fact that it is quite rare for pulmonary tuberculosis to spring up in the course of a cardiac affection. Again, it is not unusual when lardaceous disease develops in consequence of chronic pulmonary tuberculosis, to observe a distinct tendency on the part of the tubercle to be arrested in its growth. Further, in

this connection the rareness is striking with which a pneumonia complicated with jaundice proves fatal.

THIRD DAY—AUGUST 3D.

DR. G. H. HUME delivered the Address in Surgery, taking as his subject "The Evolution of Surgical Principles."

The mode of growth of scientific principles can find no better illustration than in our modern doctrines of surgical repair. The beginnings of these doctrines may be traced far back in the history of surgery. Hunter's statement that "primary healing takes place without inflammation" contains the germ of what we believe and act upon now. It did not, of course, go far enough. It defined the relationship between what was then, as it is now, ideal healing and inflammation, in the sense that no relationship can or does exist between them at all. There is, however, no such definite expression to be found in Hunter's writings with regard to the modes of secondary healing. Hunter believed, as did most of his successors down to the last few years, that a certain degree of inflammation was necessary for these delayed forms of healing. Indeed, from Hunter's time there was a falling away from the faith, and the most philosophic surgical opinion, as represented by Travers, held that a "subdued state of inflammation favors healing," and that to "supersede it would effectually retard or preclude" the process of repair.

Down to a recent period the ideas of healing and the ideas of inflammation seemed in the very nature of things to be inseparably interwoven. It turns out that they were only needlessly entangled, and ideas which in the time of their confusion belonged mainly to the region of theory have since proved to be matters of the most eminent practical importance. The process of disentangling began in and proceeded with the elucidation of the true nature of inflammation and its consequent suppuration. There was a time when the four classical symptoms of pain, heat, redness, and swelling, summed up nearly all that was known of the process of inflammation. Then followed the anatomic era, the time most fruitful of bewilderment to the student, in which, thanks to rapid improvement in the methods of microscopic investigation, attention was concentrated upon the blood-stasis, the changes in the tissues and in the vessel-walls, and on the out-wandering of the colorless corpuscles. An intermediate stage followed this in which, clinically and experimentally, the suppurative processes were recognized to be infective in nature. This culminated in the present period in which the whole process is demonstrated to be due to the agency of microörganisms. One point, however, remains to be cleared up. Is the febrile access which follows an aseptic operation, sometimes sharp in degree though short in duration, to be looked on as the result of inflammation? There is no ground for supposing it to be an infective process, the same in kind and differing only in degree from that which always tends to suppuration. If different in nature it should also be distinguished in name, and there is much to justify the proposal to restrict the word inflammation to those changes that result from the action of septic organisms, while the other and simpler process under some such title as traumatic reaction demands further examination for the clearing up of its intimate character. Such a defined use of the term would end the confusion which has hitherto attended the conception of inflammation as a disease, and would rest on the sure ground of etiology the idea to which the word corresponds.

Naturally with the true knowledge of inflammation and suppuration have come clearer and more accurate views with regard to the process of repair. Not alone in primary adhesion but in all forms of healing it is seen that inflammation is never a help, and can only be a hindrance, and that if it occurs repair must take place in spite of it, or be delayed until it has passed away. The surgeon's part, therefore, is not to treat but to prevent inflammation and suppuration, and the practical side of the scientific evolution that has taken place is the antiseptic system.

It has sometimes been made a reproach against the system of wound-treatment by the introduction of which Lister created an epoch in surgery that its methods and details have undergone constant change. But through all the alterations of detail that the desire for greater simplicity or increased security has prompted, there has been no deviation of principle. The dependence of suppuration and septic diseases upon organisms, and the prevention of these diseases by destroying or getting rid of the cause, constitute the principle on which the treatment rests, and it is one that admits of some latitude in its application. The aim can be achieved in two ways. Either reliance is placed mainly on the germicidal powers of chemical agents, or the surgeon prefers to trust rather to the removal of the minute organisms along with the soil in which they flourish. The two roads to the same end are known under the names antiseptic and aseptic; and, fortunately, both can be travelled on at the same time. It has been thoroughly learned that cleanliness takes no second place, but it is the highest virtue in surgery. Therefore no pains are spared to remove every particle of dirt from the area and all the accessories of an operation; and in addition the further security is obtained which the use of some germ-destroying agent can give.

The main changes in the technique of the antiseptic treatment have owed their origin to changing views as to the sources whence danger of infection might be expected to arise. Under the guidance of his earlier experiments, and in accord with the work of Pasteur and the investigations of Tyndall on the floating matter of the air, Lister devised his measures for the avoidance of atmospheric contamination; hence at first wounds were sealed, and later the spray was employed. Gradually the belief strengthened that the air as a source of danger might practically be neglected, and the spray was given up, with a sigh of relief. It had come to be admitted that the surgeon's hands and the skin of the patient, besides the instruments and sponges which had always been cared for, were most often at fault; and as a result even the most orthodox believers in the potency of carbolic acid or corrosive sublimate became scrupulous cleansers.

The antiseptic system admits of latitude in its application; it is open to everyone to elaborate his own technique. The worst surgery, indeed, is the stereotyped surgery; the best is that which, working faithfully from sound principles as a science, encourages as an art fertility and variety in their application. But with whatever variety of method, there ought to be now no grades in the standard of work sought to be accomplished. An

ideal of healing that was occasionally attainable by the many, or more consistently reached by the few as the result of fortunate circumstances or the reward of strenuous care, has become a generally accepted obligation. No one now is ever heard to speak of laudable pus; no pus is considered praiseworthy; but, on the contrary, if it appear in a wound for which the surgeon is responsible, and in making which he had the control of all the conditions, it is always a thing to be ashamed of. Healing without suppuration, therefore, is the end aimed at in all operation-wounds, and in a sense it is an extended description of union by first intention. It applies to wounds healing by granulation, or by the organization of a blood-clot, as well as to those uniting by primary adhesion. For all alike Hunter's description holds good: "If a wound heals by first intention all keeps quiet as if nothing had happened." As Von Volkmann, one of the most distinguished and thorough of the German followers of Lister, puts it: "A primary healing wound several days after the operation ought to look exactly as if it had just been stitched; no swelling and redness; no heat; no pain."

From trusting more, because knowing better, Nature's powers of repair, it has followed that the range of reparative surgery has been greatly widened. It is not now thought sufficient in bringing wounds together to pass our sutures through all the tissues at once, but each layer is separately stitched—muscle to muscle, fascia to fascia, skin to skin. This is one of the lessons which, if it did not at first teach us, abdominal surgery has been forward to utilize. The gain in abdominal operations is in a greatly strengthened cicatrix and the avoidance of ventral hernia. In general surgery the gain is in promoting healing by the obliteration of "dead spaces," and the consequent less frequent need of drainage. That the ends of divided muscle, if brought accurately together, will be reunited by proper muscle-tissue, and not by interposed connective tissue, as was formerly supposed, is a fact of recent acquisition, but of some practical importance. In operations on the abdominal wall—especially in certain operations for the radical cure of hernia, in which, as in Halsted's, the muscular layers are freely divided, their unimpaired reunion is essential for the success of the operation. It is necessary, therefore, that the muscles should be cleanly incised, and not haggled, and that they be afterward exactly sutured; and the cases in which such plans of operating are the least likely to result successfully are those in which the repair of so complex a structure as muscle is interferred with by suppuration.

Skin-grafting, according to the method of M. Reverdin, has long been a valued resource in hastening the cicatrization of granulating surfaces. But the method known by the name of Thiersch makes larger demands on tissue-vitality, and is of wider usefulness. When a portion of the skin—it may be as large as an inch square—is detached and transferred to a recent and aseptic wound, it retains its inherent vitality until it becomes penetrated by bloodvessels advancing into it from its new bed. It is thus fully adopted and incorporated in its new position. In its practical application the whole of a large open wound can be covered by this method of skin-grafting, so that the wound shall heal by first intention. The size of the area that can be so dealt with is only limited by the possibility of obtaining grafts, which may be taken either from the same or another individual, or from a quite recently amputated limb. It is not necessary in removing the graft to take the whole thickness of the true skin. A portion of the corium left behind will, by obviating cicatricial contraction, lessen the sacrifice for that surface which is the donor, without diminishing the value of the gift to the recipient. In plastic operations on the face, and in operations for malignant disease which have involved free removal of skin, the method has found useful application. In cases of chronic ulcer of the leg, than which no class of minor surgical ailments gives more trouble in treatment, or more certain disappointment as to relapses, Thiersch's grafting holds out a welcome hope of cure. Bearing in mind the necessity of an aseptic condition of the bed upon which the grafts are to be placed, it is requisite, by paring the edges, and by thorough scraping of the surface with the sharp spoon, as well as by the use of antiseptic solutions, to surgically cleanse the ulcer. To get rid of the irritating effects of the antiseptics, they should be washed away by sterilized water before the application of the grafts. So treated, an ulcer is brought into the condition of a recently made wound, and success entirely depends on the thoroughness with which this transformation can be effected.

In the grafting and reimplantation of bone the incorporation takes place, no doubt, in the same manner as in the case of the skin. The breaking up of the bone into small chips is not always necessary; at least in the case of the discs removed in trephining the skull. Provided these be of moderate size, they can be replaced whole.

The process of repair in nerves is still imperfectly understood. The whole subject calls for further investigation; much also would be gained by greater and more explicit detail in the records of cases.

The history of the pathology of tubercle is divided into periods that correspond to those in the history of inflammation. There was the period of physical form, when the name was given to whatever was a tubercle in feel and outline; there was the period of minute anatomy, when the disease consisted of special cells and cell-groupings; and there is now the period which, as in it we have learned the essential cause of the disease, may be called the stage of real knowledge.

Before the microbic origin of tubercle was known surgery was becoming more aggressive in the treatment of so-called scrofulous disease. Scrofulous glands, for instance, were excised many years ago, at first against the protest of those whose minds were wholly influenced by the supposed constitutional origin of the complaint. The surgery of strumous joints also had long been both more conservative and more successful. But from the new light the surgery of tubercle has gained immense encouragement. The commencement of the disease in a locally-infected area has modified and restricted the conception of a constitutional tendency. The constitutional origin has been changed into a constitutional vulnerability; and, undeterred now by an idea that weighed upon him just in proportion to its vagueness, the surgeon undertakes the treatment of local manifestations of tubercle by local measures. In consequence the surgery of tubercle has undergone great extension. Affections of the skin, of the glands, of the bones and

joints, of the urinary organs, of the peritoneum, wherever the disease can be reached and wholly removed, or its action favorably modified, it is submitted to local treatment. The extension has been in the direction not only of new applications, but of greater thoroughness. The knowledge of the infective character of the disease and of the liability to local relapses, or even general infection as a consequence of incomplete removal, has led, for example, to the excision of every affected gland or of every diseased focus in a joint. The guidance afforded by pathologic knowledge is even more explicit with regard to other points of treatment. The important question of general infection has light thrown upon it by what we know of Nature's endeavors to imprison a tuberculous focus by a wall of granulation-tissue. When by an incomplete operation we break down this wall or cause it to crumble by infecting it with pus-microbes, without entirely removing the tuberculous disease, we open the way for the passage of the tubercle-bacilli into the system. Hence the extreme necessity of keeping our operations free from sepsis, as well as of making them thorough. The success of the treatment of cold abscesses by evacuation, scraping and flushing, and closure of the incision—the method known by the name of Mr. Barker—is only intelligible when their true pathology is known.

The substitution of arthrectomy for formal excision has its motive in the removal of all diseased foci and surfaces, with the least possible interference with the integrity of the limb. Its occasional failures to effect lasting cure are explained by the readiness with which scraps of diseased tissue or tuberculous foci in the bone may be left behind.

The whole disease-picture presented by carcinoma offers so many points of resemblance to that of tubercle that the probability of a parasitic origin of it also has at present taken strong possession of the minds of pathologists. The occurrence of minute organisms of the class of sporozoaria in connection with carcinoma may be held to be demonstrated; but any causal relationship between them and the disease has not been proved. On one point of importance there is agreement and a growing readiness to act upon it. Due largely to the influence of Mr. Jonathan Hutchinson, a precarcinomatous stage is recognized; and it follows from the recognition that surgery ought to interfere during this period of suspicion. Another point of practical moment is brought out by the observations of Dr. Sims Woodhead and Mr. Harold Stiles on the channels of lymphatic infection. It is shown that whenever irritative or effete material has to be dealt with in large amount a special filtering tissue is developed. This, which consists of a growth of adenoid material, is formed in the connective tissue along the lymph-channels, and is produced still more strikingly by the transformation of the small lobules of fat in the axilla. One of the great difficulties of dealing with carcinomatous disease is that we have no means of knowing when lymphatic infection first takes place. As the lymph-circulation is always going on there is no reason why infection may not occur in the very earliest stage of the primary growth. If we are to trust cases of removal of the original carcinoma with no subsequent recurrence—that is, cases of cure—it may never occur at all. We do know that the infection may lie dormant for months or even years before it gives any gross indication of its presence. In dealing with it, therefore, we are meeting an enemy whose first invasion is invisible, and whose strength at any time we cannot even guess at; but all we know of its nature—both the old knowledge and the new—only points to the necessity of free removal. It indicates the removal of the next group of glands along with the primary carcinoma, whether they show gross enlargement or not; and when an operation-wound for excision of the breast and clearing out of the axilla can be healed by first intention under one dressing there should be the less objection to extensive operations for malignant disease, if only some additional security can be gained. The rules, then, enjoining early and free removal, and their application also to recurrences, so long as these are removable, are the broad principles which surgeons accept in dealing with malignant disease; they are the results of experience, and are confirmed rather than in the first instance dictated by scientific knowledge.

It is infrequent now that from topographic anatomy comes any suggestion for a fresh advance in surgery. But now and again a corrected misrepresentation or reading of anatomic facts, a new point of view or hitherto unthought-of relationship will lead to a change in surgical practice. In illustration, the rapid creation of the surgery of the cecum and appendix, in part under the impetus of the general development of abdominal surgery, still more as the rational outcome of that corrected view of the anatomy of the parts with which we associate the name of Mr. Treves was pointed out. A yet more striking instance of a change in procedure, abrupt as a revolution, effected from the anatomic standpoint, is the revival in our time of the high operation for stone. The new facility in its performance afforded by the use of the rectal bag along with distention of the bladder—again, the bias given by the growing interest in abdominal surgery, and the tendency in the present day to prefer open operations in which the parts dealt with lie well exposed to both hand and eye—all these contributed to the rapid adoption of the change.

The question of amputation in senile and diabetic gangrene of the foot seems to be in course of settlement in favor of operation. The condition is almost certainly fatal, and is fatal often after a period of lingering and intense suffering. As a measure for its relief or for the saving of life, amputation has almost uniformly failed when it has been done in the lower part of the leg. The gangrene seizes upon the flaps, and if the limb be reamputated higher up the stump is again attacked. But it has been found that if the leg be taken off in the first instance above the knee a fair proportion of cases recover. About one-half, according to the most recently collected figures, have been successful, and in a condition so hopeless and usually so painful, such a result is better than the certain issue of non-interference. Experience thus favors the establishment of the surgical canon: In spreading gangrene of the foot, amputate through the thigh.

An old and familiar surgical canon formulated by our predecessors as the result of experience, enjoined on the surgeon the duty of operating, "when in doubt," in all cases of hernia. We greatly need the guidance of some equally definite rule in cases of internal obstruction.

Upon the question of operation surgeons are, if not divided into two parties, at least biased in contrary directions. Some would operate in all cases of complete obstruction so soon as they have the opportunity; others would try other measures, see what Nature will do, and operate as a last resource. Strong arguments are to be found on either side. The surgeon who would always operate, and had always an early opportunity of doing so, would unquestionably achieve the best results possible, although he would operate on a certain proportion of cases that could spontaneously recover. Unfortunately no one is brought in contact with even the majority of his cases in an early stage. Hence arises the force of the contrary arguments. The circumstances that militate against the success of operation for internal obstruction in the fully established or later stages of the complaint are twofold. In the first place, in nearly all cases secondary changes speedily ensue, which hinder the search for the obstructing cause, and which may nullify attempts at its removal. In the second place, the patient often passes, it may be at an early period, into a condition mainly due to poisoned blood in which he trembles on the brink of collapse, and in which operation is badly borne. Add to these the fact that a not inconsiderable number of cases, even when there is stercoraceous vomiting, do recover, whose chance of recovery would disappear under the shock of an operation; and we have a fair statement of the reasoning against operating in all cases. Where are we to look for guidance? Mainly, the question must be settled by experience, which brings the ability better to discriminate between the different causes producing obstruction, and to appreciate the prognosis to be attached to each. In a syllabus of intestinal surgery recently published by Dr. Byron Robinson a list of eleven different causes of intestinal obstruction is tabulated. When we have learned more accurately to distinguish between these at the bedside we shall be much nearer to the acknowledgment of a surgical canon or rule to guide our interference.

The magnitude of many modern operations carrying surgical interference to the verge of what the human body can sustain make it more and more incumbent on the surgeon to avoid, or as far as possible to minimize, shock. We do not know the exact pathology of the condition; probably several different conditions are included under the name. But we are very familiar with its symptoms. We know that the patient becomes cold, that the heart's action is depressed, and that all the nervous functions are lowered. We know also that it is induced or aggravated by prolonged operation, by chilling of the surface, by hemorrhage, whether this take place rapidly or by continuous oozing in small quantity for a long time. The giving of chloroform on successive days also lowers the patient's resisting-power. All this supplies hints enough for its prevention and treatment. Something can be done in anticipation of the operation in the way of propping both the physical and moral courage of the patient. Much can be done after the operation in rallying from the condition; and a very small, stimulating hypodermatic dose of morphin has proved then of greater use than the same measure employed as a prophylactic. Transfusion with a normal saline solution has so wonderful a power of rallying from shock, though its good effect has been disappointingly transitory, that its use will now not be neglected. But most is in our power in the way of prevention by guarding our patients against all those causes that produce shock or aggravate it; and, therefore, the surgical canon which in this matter claims not formal acknowledgment but systematic observance is, avoid or as far as possible minimize shock.

(To be concluded.)

SELECTIONS.

ABUSE OF MEDICAL CHARITIES.

Here in London, after about a quarter of a century of agitation, and after innumerable confessions of gross abuse by the most competent authorities on the subject, no attempt whatever is being made to formulate any plan by which that abuse may be checked, and if any reflection is made in the journals on hospitals where out-patients are received out of the streets in thousands without any pretence of inquiry, the staff of those hospitals rush to the defence of the system.

Meanwhile, the numbers of out-patients are growing, and so is the pecuniary embarrassment of the hospitals, Mr. Yerbury, a member of the Distribution Committee of the Saturday Fund, writes to the *Times* of July 14th to make an earnest appeal for the Fund, and points out in his letter that the "number of new out-patients" is 1,132,433, carefully distinguishing between that number and the number of visits. He also points out that "one noble institution has been compelled to close 140 beds and another 30 for want of funds."

Now, no one can regret more than we do the embarrassments of our hospitals; nowhere does any effort to mitigate them obtain more cordial support than in this *Journal*. So we have no fear of being charged with being an enemy to the hospitals if we tell them the truth. And it is the truth admitted by their warmest friends and supporters that the out-patient system is a blot upon their fame, and that some united effort for its amendment will soon be insisted on by public opinion. That amendment must take the form of regulations to exclude both persons able to pay for advice and also persons unlikely to derive benefit from hospital treatment, and whose ailments require home treatment and supervision. We had looked with hope to the inquiry recently instituted by the Lords' Committee to lay the foundation of that reform. It seems only too likely that all such hopes will be frustrated, and that the reform must spring from the public and from the profession. But these must act through some agency.—*The British Medical Journal.*

CONSULTATION WITH HOMEOPATHS.

Mr. Hart does not realize that the profession in America has the same view as in England concerning consultation with homeopaths.

He says: "How can we expect to enter into consultation with one whom we believe to be possibly practising an honest delusion, and yet with whom we must accept the position of a mere solver of riddles?"

The agitation on this point has long since gone by. Here is the question for which the new code men strive:

May a regular go with a homeopath to see a patient, or may the latter bring the patient to his office, if the patient is treated according to rational medicine?

It is fair to conclude that when a homeopath needs a regular he needs him badly or he would not call him, and, "as the good of the patient is the sole object in view," this is a strong argument on the part of the new code men. In the nature of things it appears difficult to frame in words the meaning of this; certainly the Committee on Revision does not put it clearly. And until the new code men say just what they mean, it might be as well to keep to the old code; or, if they can't say what they mean, and this is best for medicine and the people, then let us have no written code for contention. We want to know next year, at San Francisco, intelligibly, just what we are voting on.—*Omaha Clinic.*

NEWS ITEMS.

The Pan-American Medical Congress.—Program of the Section on Pathology.

One session will be devoted to a formal discussion on the subject of "Carcinoma," to be opened by Dr. Wernicke, of Buenos Ayres, as referee, and Prof. Allen J. Smith, of Galveston, as co-referee. Papers on this subject have been promised by Dr. Joshua M. Van Cott, Honorary President of the Section, and Dr. Joseph McFarland, of the Advisory Council.

Another session will be devoted to "Yellow Fever," the discussion to be opened by Drs. Acosta and Grande, of Havana, Cuba, and as co-referee, Dr. A. J. Amades, of Puerto Rico, Honorary President.

Dr. James E. Reeves, of Chattanooga, of the Advisory Council, will give a practical demonstration of the methods in "Pathologic Histology."

Dr. Wm. M. Gray, of the Army Medical Museum, will give a practical demonstration of the methods in "Photography Applied to Pathology."

Dr. J. J. Kinyoun, P. A. Surg. U. S. Marine-Hospital Service, will give a practical demonstration of "Methods in Bacteriology.

The following papers have been promised: "Notes on Three Years' Work in the Pathologic Laboratory of the Charity Hospital of New Orleans," by Dr. Henry Dickson Bruns, of New Orleans; "Medical Geography of Puerto Rico," by Dr. A. J. Amades, of Puerto Rico; "Theories of Inflammation," by Dr. Jose Torres Matos, of Havana; on "Inflammation," by Dr. E. O. Shakespeare, of Philadelphia; on "Cholera," Dr. Herman M. Briggs, of New York; "L'Etat Hyperexcitabilité du Nerf Phrénique, dans le Beriberi," by Dr. J. B. de Lacerda, of Rio de Janeiro; "Paludismo," by Dr. A. J. Amades, of Puerto Rico; "Bacteriologic Observations on the Waters of the Harbor of Havana," by Drs. Acosta and Grande; "Observations on Malaria," by Drs. Coronado and Madau; "Operations of the Anti-rabic Laboratory in Havana," by Dr. Acosta; "Abscess of the Liver," by Dr. James E. Reeves, of Chattanooga; on "Influenza," by Dr. Ramon Guitéras, of New York; "Observations on the Brains of Feeble-minded Children," by Dr. Henry W. Cattell, of Philadelphia; and "Pathology of Pelvic Inflammatory Trouble," by Dr. Joseph Price, of Philadelphia.

Papers have also been promised by Prof. Wm. H. Welch, of Baltimore; by Dr. W. T. Councilman, of Boston; by Dr. G. F. H. Nuttall, of Baltimore; and Drs. William E. Hughes and W. S. Carter, of Philadelphia.

Prizes for Nurses.—The *British Medical Journal* announces that two prizes, one of $75 and another of $25, are offered by the editor of the *Hospital*, London, for the best two plans for a model nurses' home and training school. The competition is open to women superintendents, matrons, and nurses in the British Empire, the United States, and the countries of Europe. Descriptions must be type-written and consist of two parts: (1) a statement setting forth categorically all the rooms and accommodations which are necessary in order to make the proposed nurses' home a model of what such an establishment should be where room is provided for from 50 to 100 nurses; (2) a second statement and plan prepared in similar form which provides accommodation for from 150 to 200 nurses. Each of these specifications must be accompanied by plans drawn to a uniform scale and must explain how the proposed home for nurses can be extended, should the growth of the establishment render such a step necessary. Competitors must send their names and addresses by November 1, 1893, to Dr. J. S. Billings, United States Army, Washington, D. C., and all plans and proposals presented for competition must reach Dr. Billings not later than January 1, 1894. Dr. Billings, Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital, Baltimore, Md., and Miss Sophia S. Palmer, Superintendent of the Garfield Hospital, Washington, D. C., are to be the judges of the papers and plans submitted, and their decision will be final. All proposals must be type-written, on one side of the paper only, and all plans must be drawn to a uniform scale of ⅛ inch to 1 foot. It is proposed to publish an account of the competition, with a selection from the competing plans, such publication to be undertaken by the *Scientific Press*, London, at their option, to whom papers and plans will be sent by the judges after they have made their award.

A Case of Cholera in New York Harbor.—It is officially announced that a case of cholera has been found among the passengers of the steamer Karamania, which left Marseilles on July 15 and Naples on July 22. The diagnosis was based upon the detection of cholera-bacilli in the intestinal evacuations. The patient had been isolated on Swinburne Island, and is recovering. All of the other passengers are in good health. There is no fear of a spread of the disease.

The International Medical Congress Postponed.—Dr. A. Jacobi, Chairman of the American National Committee of the Eleventh International Medical Congress which was to meet in Rome, Italy, September 24 to October 1, 1893, has received a cablegram that the meeting of the Congress has been postponed to April, 1894.

The Medical Society of Virginia will hold its twenty-fourth annual session at Charlottesville, Va., October 3, 4, and 5, 1893. An interesting program is in process of arrangement.

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ORIGINAL ARTICLES.

CLINICAL LESSONS.

Erythromelalgia: Red Neuralgia of the Extremities—Vasomotor Paralysis of the Extremities—Terminal Neuritis (?).

BY S. WEIR MITCHELL, M.D.,
PHYSICIAN TO THE ORTHOPEDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES, PHILADELPHIA.

I THINK myself fortunate in being able to show you this morning the two cases now before us. One is a typical example of vasal spasm in the arterioles of the fingers and is known as Raynaud's disease. The other is the remarkable malady which I first described in 1872, and to which in 1878, at Professor Ashhurst's suggestion, I gave the name of *erythromelalgia* (redness, extremity, pain); "red neuralgia" some like to call it. It is inconceivable that these two disorders should ever have been confused, and yet at least one able observer speaks of erythromelalgia, dead fingers, local asphyxia, local syncope, symmetrical gangrene, as all being simply different types of Raynaud's disease. I hardly imagine anything clinically more strange than to consider the cases before us as one. Examples of Raynaud's malady are not rare; cases of erythromelalgia are very uncommon.

Here before you are two people. One is a pale, nervous, excitable woman, whose condensed history my clinical aid will presently read. We shall somewhat abbreviate, for the whole matter has become familiar, and except as to the mechanism of causation[1] concerning the clinical features, we know all that we are likely soon to know. I show the case now only as a contrasted clinical picture.

C. L., single, thirty years of age, a dressmaker, is an intelligent woman. She has had no grave illness, but after a long strain and much work she began to have the well-known corpse fingers. These attacks became severe and more lasting, and by and by passed at times into the condition of local asphyxia, the fingers becoming livid in tint. Later, she had slight gangrenous loss of all the finger-tips. You see the scars on the finger-tips, now white and cold. This state may go and come, or may end in the livid condition when the returning blood stays in the part and becomes black.

Observe now that when I prick the livid finger the blood flows out black, and does not redden by exposure. It is clear that it is locally charged with excess of carbon dioxid, but has no other peculiarities. Many of Raynaud's cases suffered much pain. This woman, like others I have seen, has had but little.

Turn now to this man in the rolling chair. Thin, ruddy, anxious-looking, he is in no wise hysterical, and is both patient and intelligent. His face bears the signal lines of pain. Look at his foot, as it lies on the extended leaf of the chair. There is nothing notable about it, except the scars of the old injury. It is like the other foot—neither red nor pale. He says it aches continuously, a dull, deep-burning ache. Also, as you see, it is tender to deep pressure and less so to lighter pressure, except as to the outside and as to the heel and fourth and fifth toes. I ask him to rise. He does this aided. He positively will not stand on the foot. He leans now on a chair. Almost at once three of the toes become of a bright, rosy tint. Then, beginning in island-like spaces, a deeper tint covers a large part of the foot. The arteries throb. The veins stand out in strong relief. In a few minutes the vascular tumult lessens. The arteries cease to throb. The redness becomes dusky, or in places purplish—not livid, as in the woman's case. At once the dependency of the foot brings increase of pain, and this gets worse until he will not stand longer or falls fainting.

In like degree the hyperæsthesia, both of depth and surface, is augmented. Finally, the touch of a feather gives pain, and deeper pressure sends darts of pain up the track of the posterior tibial nerve. At last the pain is unendurable and I must let him put the foot up again on a chair.

It is interesting to observe how unstable everywhere is his surface circulation; how flushes come and go over the legs and trunk, and how notably the other foot changes color.

Surely, no two more entirely separate groups of symptoms could be found: this cold, white hand, with its pale fingers, free from pain of any moment and more or less anæsthetic, and now presently livid; this hot, deep-red foot, so painful that its torment brings out the sweat on the sufferer's brow.

Before dismissing these cases I desire to say a few words as to the contrasts they offer.

Lannois, whose book I mentioned, thus characterizes local asphyxia, or symmetrical gangrene and erythromelalgia. I have somewhat altered his definitions:

Local asphyxia (Raynaud).	*Erythromelalgia* (Weir Mitchell).
Sex: Four-fifths females.	In twenty-seven cases two were women.
Begins with ischemia.	Little or no difference of color is seen until the foot hangs down in upright posture, when it becomes rose-red.
The affected parts become bloodless and white. In certain cases there is the deep, dusky congestion of a cyanosed part, with or without gangrene.	The arteries throb, and the color becomes dusky-red or violaceous in tint.
Pain may be absent or acute, and comes and goes; has no relation to position. May precede local asphyxia.	Pain always present; worse when the part hangs down or is pressed upon. In bad cases, more or less at all times.

[1] Med. Record, N. Y., July, 1885.

Unaffected by seasons. In many cases all the symptoms can be brought on by cold.	Worse in summer and from heat. Eased by cold.
Anæsthesia to touch.	Sensation of all kinds preserved.
Analgesia.	Hyperalgesia.
Temperature much lowered and unaltered by posture.	Temperature greatly above normal. Dependency causes in some cases increase of heat; in others, lowering of temperature.
Gangrene local and limited; likely to be symmetrical.	No gangrene; asymmetrical.

Erythromelalgia, then, is a chronic disease in which a part or parts—usually one or more extremities—suffer with pain, flushing, and local fever, made far worse if the parts hang down. There are mild cases which do not progress, and which may come and go. There are others which exhibit all the symptoms to such a degree as to make the disease one of terrible torment.

In 1878, when my second paper was published, I predicted that the malady would soon be shown to be more common than it appeared then to be—and this has proved to be the case. Lannois' treatise [1] gives many cases, and of late the German observers have delineated it with their usual care, and especially Gerhardt. At the time I wrote, I would, if driven to be positive in statement, have inclined toward considering this malady as due to some form of spinal disorder. And this may yet prove more or less true of some of the cases, or of some stage of the cases. But at present the reasonable explanations incline rather toward some form of that new clinical perplexity, peripheral neuritis. Light is cast on the matter by the later history I have just obtained of the case of Mr. K., whom I saw in 1876, and whose story it seems worth while to give here at length, before returning to the discussion of causes. Here is a brief *résumé* from my paper of 1878.

CASE II.—G. K., single, clerk, lost his right arm in war, 1862. Army life was too much for his strength, and in 1864 an attack of typhoid left him with impaired vision—relieved in 1872 by glasses. Between these latter dates the foot-trouble began, with burning pain and redness, made much worse by exercise. He persisted in walking until he caused blisters, and these were the only nutrition-changes I have ever seen in this disease. In 1875, with some evidences of paresis in leg and arm, the remaining hand became red, tender, and painful. The case was typical. In July, 1877, after extremities of anguish, Mr. R. went to Elmira, where Dr. Morris Lewis saw him for me and made notes. There was little change as to the disease. But he had become silent and morose, and was unable to be out of bed. From November to July of 1877 he had nine attacks of convulsions or rather of general rigidity. He spoke slowly and in whispers. Clearly he had become more or less hysterical.

There was slight œdema from the waist down. Pressure on the spine caused pain, and the extremities were very tender everywhere. The finger-ends were bluish and cold. The last two phalanges were smooth, red, and shiny—reminding one of certain cases of traumatic neuritis. There was great pain in the feet, the worse for heat and dependency. Also, he complained of girdle-pain at the waist. Sensation in all forms was normal as to motion; a fine tremor existed throughout upon effort. There was very quick exhaustion, but no other distinct loss of power. Temperature and electric tests were difficult and objected to. Faradic reaction in the arm-muscles was normal. The same current in the leg-muscles caused no motion; a stronger current caused general convulsive movement of the limb. There was no other obvious change.[1]

To my surprise, I learned of late that this unfortunate gentleman was still alive. One of our staff, Dr. Burr, has visited him at my desire, and this is the present history, after at least twenty-three years of varied suffering.

DR. BURR'S REPORT.

"The patient's condition remained the same from the time Dr. Mitchell last saw him until 1883, during which year the redness in the feet slowly disappeared and the pain grew less severe and finally became a mere ache. There has never since been a return of the color. For some years the legs and abdomen have felt numb or, as he expresses it, he is 'dead from the belly down.' He has never had a bedsore. He has lost flesh during the last part of five years, but at times increases a little in weight. He lies on the right side or back, with the eyes covered by two bandages. Lying on the left side causes pain in the left shoulder. The room is kept darkened. He has not read for many years, not because vision is bad, but because doing so causes occipital ache and nervous feelings in the head. The voice is whispering, and so low that he is heard with difficulty. There is remarkable emaciation, the abdominal wall almost falling against the spine. The skin is very pale, but the mucous membranes are of fairly good color.

"As he lies in bed the feet fall forward in lax extension. He can flex and extend the toes, ankles, and knees, and adduct and abduct the thighs while the legs are supported by the mattress, but he cannot raise the legs from the bed. He can move the left arm weakly in all directions, but has not strength enough to grasp anything. He cannot feed himself. There is no more wasting of the legs than of the rest of the body. Position does not now influence the color of the extremities. There is no œdema of the feet. The skin-temperature is good to the touch. There is no rigidity at the ankle-joint, knee-joint, or thigh-joint, passive motion being perfectly free. No trophic joint-lesion is present. As to sensation, he localizes touch in the legs and the arm perfectly. Contact is often felt as pain, more so in the legs than in the arm. There is no more pain on pressure over a nerve than over a muscle. There is no discoverable swelling of the nerve-trunks.

"The reflexes in the legs are all increased. A slight touch on the soles, and at times, indeed, on any part of the legs, will cause the member to be quickly and forcibly drawn up, and sometimes the movement may extend to the other leg. The knee-jerk is quick, large, and spastic. Clonus is present in both feet, and at times, patellar clonus can be produced. The left elbow-jerk is present, but not very marked. The muscle-jerks are capricious. Chin-jerk cannot be obtained.

"The bowels are moved once in eight or ten days, always by strong purgative medicine or mechanically. He never has a voluntary stool. He cannot hold water

[1] Erythromelalgia, p. 71. 1880.

[1] Amer. Journ. Med. Sci., July, 1878, for full report.

after the desire to micturate comes on, but the stream is good and there is never dribbling. Sexual desire and power are abolished. Examination of the abdominal and thoracic organs is negative. Sleep is variable and often restless. Violent jerking of the legs is frequent during slumber. He now has no violent pain in the feet, but at times much severe aching. He can foretell a storm by increase in foot-pain and shoulder-ache. He complains much of queer, indescribable feelings in the head.

"There is no difficulty in swallowing. Appetite is variable. Mental condition is good, but all mental effort is disliked. I believe that at the present time an hysterical element is added to his organic disease. His manner, voice, and head-symptoms point in this direction."

On the 13th day of April, 1893, this patient died in Washington, and to my regret no cadaveric section was allowed.

Seen in the wisdom-yielding light of many years this case seems to have been originally a neuritis of peculiar type, resulting, as time went on, in the addition of hysteria and of lasting spinal lesions to be discerned in the clear language of spastic conditions, excitable reflexes, clonus, and girdle-pains. Neither hysteria nor the added spinal malady may be essential features of the disease. I have seen them in other cases, not always with the same manifestations as here. And on the other hand, I know of erythromelalgias of milder type, which, after twenty-five years, have altered little, and certainly have not become worse or added a single spinal symptom. The old age of a case may really be of more analytic value than a cadaveric section. In K. the neuritis clearly ceased to be a very active agency. The sequent spinal malady, probably at one time itself a central and limited neuritis, remains and, too, the hysteria is visible enough. And now let us turn anew to the present case. Mr. K.'s case, as I read it to-day, might have been better studied in 1876. I did not realize its importance. I lay before you Dr. Rhein's notes of the present case, taken in my ward. Dr. Burr has also given it his careful attention. It is so pure a type of erythromelalgia that I consider it most desirable to study it with extreme minuteness.

T. S., twenty-one years of age, a stonecutter, applied for treatment at Dr. Goodman's clinic in February, 1893, on account of pain in the right foot and difficulty in moving it. Dr. Goodman, promptly recognizing the neurotic element in the case, kindly transferred the patient to the care of Dr. Weir Mitchell. The family and personal history is negative.

In February, 1892, the patient, with several other men, was raising a stone weighing between ten and eleven hundredweight, when the board supporting it broke and one end of the stone fell three feet and struck the patient's right foot just in front of the ankle-joint. In a few moments the stone was removed. The patient was unconscious for a little while. After about an hour he again became unconscious, probably because of the great pain, and remained so for four hours. The wound was superficial and bled very little. The foot and leg, half-way to the knee, swelled considerably. The patient was kept at rest for four days and hot water was applied to the leg. Six weeks later a large swelling upon the sole was incised for relief of a supposed abscess. Little bleeding followed, and there was no evidence of suppuration. Ever since the injury there has been difficulty as to motion in the ankle, owing to pain. He began to walk December 24, 1892. The swelling did not disappear entirely until two months after the accident. Walking caused sharp pain under the internal malleolus and just in front of the ankle-joint. In damp weather there was pain in the right great toe. The right foot felt warmer to the patient than the left. The effort to walk was soon given up and the horizontal position permanently assumed as the only one possible to be borne.

There are at present five scars due to the injury on the dorsal aspect of the foot. One, 1 cm. by 1.4 cm. in size, is situated 6 cm. internal to the median line of the foot and 9 cm. below a line connecting the malleoli. The second, about the same size, is 7 cm. to the inner side of the first. In the median line and anterior to the first are three smaller scars each about 2 cm. in diameter. They are all dark purplish and hypersensitive to pressure. He is unable to stand up or, rather, to sustain any part of his weight on the right foot, except for a moment, by resting on the heel alone.

The whole of the right foot, as he lies at rest supine, the leg being extended, is slightly redder in places than the left, but after a few minutes in this horizontal position it is observed that, save for the tint of the scars, the feet are indistinguishable in hue. When standing erect, with the right foot hanging down, the foot becomes flushed at once; the first and second toes take on a rare red, and this extends, appearing here and there in islets of deepening color until the whole foot is of a dark, dusky tint, which becomes more pronounced the longer he is up. The upper limit of redness is marked by a dark-red band on the ankle, 1⅜ inches above the lower border of the internal malleolus. It encircles the limb, except for an irregular space, on the outer aspect.

The beginning of the flush in the pendent foot is marked by increase in the size of the veins and in a visible and rapidly augmented force of arterial pulsations. It is a true vascular storm. After a few minutes the veins remain large, but the arterial throb lessens; the color becomes more and more purplish, but even after a half-hour, when the patient stood on crutches, was never of the smoky tint seen in local asphyxia. When again put at rest and supine, all of the vascular symptoms disappeared quite promptly. The whole foot is over-sensitive in all positions. The hyperæsthetic areas differ, according as the part is level or pendent. It is hypersensitive to pain and to heat and to cold and to pressure. The diagrams make clear the facts without need of fuller verbal statement.

When lying on a level slight touches give no pain, but the least increase of pressure hurts. Pin-pricks cause extreme pain; all degrees of heat or warmth are over-appreciated up to the knee. The same degree of heat and also of cold seem, as the case might be, hotter or colder than they appear to be when applied to the other leg. This is also far more notable when the tests are made in the flushed areas.

There is constant ache of the right foot, even when at rest on a level. Motion, passive or active, makes it unendurable. If upright, it grows far worse, and he at last becomes faint. When erect, the least touch is productive of extreme pain.

The outer side of the foot, supplied by the external saphena, is unaffected, and this is true of the heel, which is supplied by the plantar cutaneous branches of the posterior tibial nerve. The rest of the plantar surface, supplied by the internal and external plantar nerves; the inner surface and dorsum of the foot, supplied by the internal branch of the musculo-cutaneous nerve and the long or internal saphenous nerve; the adjoining sides of the great and second toes, supplied by branches from the anterior tibial, which communicate with the internal branch of the musculo-cutaneous nerve, are involved. The area of beginning sensitiveness up the posterior leg and thigh is supplied by the small sciatic. The light shading shows the areas sensitive to light pressure, while the dark shading shows the areas sensitive to firm pressure.

Fig. 1.

Motion. The power over extension and flexion of the foot is hard to study because the pain inhibits motion. At rest there seems to be power to move the ankle and toes. Above the knee the movements appear to be with normal power.

Dynamometer: Hand, right, 158; left, 155.

There is marked atrophy of the calf-muscles, chiefly involving the anterior group. The circumference of the right calf 5 cm. below the tubercle of the tibia is 27.6 cm.; of the left calf, 30.7 cm. There is also some wasting of the vastus externus and vastus internus, the circumference of the right thigh a few inches above the knee being 39.5 cm., while that of the left thigh is 42 cm.

The circumference of the thigh at the highest point is, on the right, 51 cm., on the left side, 50 cm.

There is, when at rest, a fine rhythmical tremor involving the whole leg, and when circular pressure is made about the calf muscles it is increased. When the leg is long elevated above the level of the pelvis this tremor gradually disappears. Besides this there may be observed, occasionally, a clonic spasm of the flexors of the first, second and third toes, much increased as to number and force when the foot hangs down. There is also seen a fibrillary tremor of the calf-muscles, more especially posteriorly and of the posterior thigh-muscles.

The foot was occasionally re-examined when pendent. The pain varied, as did also the color. The patient says it is always worse in bad weather. Finally, the foot was elevated on an inclined plane, 40°, for three weeks. This rather lessened the pain, but made the whole posterior tibial nerve very tender. After a day or two of rest at a level this passed away; nor has there been at other times sensitiveness on pressure of any nerve-trunk outside of the area of flushing.

When, at the end of the three weeks, the foot was permitted to hang down, all of the symptoms at once returned in their utmost severity.

A day later, a bandage restricting the return of venous blood was put on at various levels to see if this would cause the vascular storm seen in the pendent foot. It did not. The right foot scarcely flushed more than, under like circumstances, does the normal member.

Reflexes: Right knee-jerk, + +. Spastic; reinforcible by M. and S.

Left knee-jerk, normal.

Ankle-clonus, right, six or eight beats.

Ankle-jerk, right, + +. Spastic.

Ankle-jerk, left, normal; no clonus.

The arm-reflexes are normal.

Muscle-jerks: To blow, right, below knee, excessive as compared with left.

All skin-reflexes are normal.

Electric examination (made by Dr. Willits).

Far.: Foot-extensors, ½ in. coil, right leg; 1 in. coil, left leg. Foot-flexors, ¾ in. coil, right leg; 1 in. coil, left leg.

Extensors (tibialis ant.): Galv., k. cl. c., 4 milliampères, right leg; k. cl. c., 5 milliampères, left leg. Flexors: An. cl. c., 5 milliampères, right leg; an. cl. c., 8 milliampères, left leg.

There is, therefore, quantitative increase in the leg-muscles of the affected side; no qualitative change. Sensation to rapid faradic current is lessened on the affected side.

The eyes were examined by Dr. de Schweinitz, who found vision, pupils, fundus, form, and color fields, all normal. The heart has a faint systolic murmur at the apex. The lungs are normal.

Examination of the surface-temperature of the legs gave the following results: Mouth, 98.6° F. Legs flat in bed—the thermometer on dorsum of foot, behind great and second toe—right foot, 95°; left foot, 87.8°. Legs hanging over side of bed, after thirty minutes, right foot, 95°; left foot, 86.6°.

Mouth, 101.8° (patient has slight pharyngitis). The patient being flat in bed: right foot, 96.8°; left foot, 94.6°. Legs hanging: right foot, 95.8°; left foot, 92.6°.

Repeated examinations were made. There were marked variations of temperature in both extremities. Once both feet were colder than the thermometers would register, viz., 86° F. The affected foot was always the warmer. The temperature fell when the feet were pendent.

No record of treatment is here added, as nothing did good. The man was wonderfully patient, but wore a look of suffering and was absolutely free from hysteria.

This story, as told in Dr. Rhein's notes, but too well

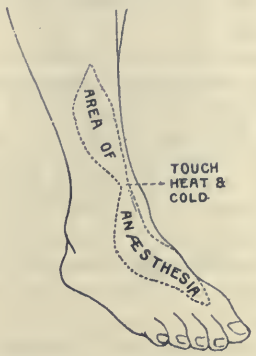
illustrates the obstinacy of grave cases of erythromelalgia, and accords with a long and miserable accumulation of therapeutic failures. I never saw a bad case get well. A few milder examples have varied much, or even seemed to become well, or remained slight enough to be borne. I know of one case, that of a woman in middle age, in which the pain and flush, limited to the dorsum of the foot, comes and goes, seemingly without cause. Nothing helps her, but rest in bed is unavoidable. The usual treatments have failed in this present case, and I have no desire to repeat what has proved valueless.

Whatever may have been the originative cause in other cases, here there is a clear story of wound, of the peculiar swelling so common after neural injury, and which has over and over been laid open as an abscess by men not easily deceived. Then there is the gradual increase of tenderness far in excess of that seen in ordinary inflammation. I am of opinion that we have to deal with a general neuritis of the foot caused by the wound.

I shall later return to this question of neuritis, and the quality of it also. We are now concerned with treatment. I have confessed to complete therapeutic defeat in all my previous cases. It has seemed to me that it would in this man's case be reasonable to cut the nerves which are as to motion unimportant, and to do this near to the foot, and as to the two great plantar trunks, to stretch these—I shall ask Prof. Keen therefore to exsect portions of the internal saphenous and musculo-cutaneous nerves and to stretch, as I have said, the two plantars. These measures ought to largely destroy feeling on the dorsum and the inside of the sole and dorsum, and by the stretching of the terminal branches of the posterior tibial much lessen the sensibility on the sole. The anterior tibial, if one may trust the *Anatomies*, has a small share in the innervation of the foot, but the inosculations and interchange of nerve-fibers are such that I may find, as one does in the hand, that a section by no means strengthens one's esteem for the pictures and statements of the anatomist. The step I propose has not been taken before in this disorder, but is a common enough resort in truncal neuritis. My hope is that the operations I contemplate will lessen the reflex influences which cause the vascular congestion and will so diminish sensibility as to permit massage to be painlessly employed.

Dr. Keen operated on April 10th. He exsected two and one-half inches of the musculo-cutaneous nerve, and the same length of two branches of the internal saphenous. The two end branches (plantar) of the posterior tibial nerve were stretched at the internal malleolus with a traction of fifteen pounds thrice used. The result next day was remarkable. There was almost immediate relief. The foot could be squeezed, pinched, or pricked without pain. Anæsthesia, as shown by the accompanying diagram, was not as extensive as we were led to expect it might be. The day following operation the temperature of the feet was: R., 95° F.; L., 93.5° F.; mouth, 99.5°. On the right, clonus was still present and the knee-jerk was still excessive. The wounds healed in a few days. On the 4th of May the patient began to walk on crutches. Clonus had then disappeared and the reflexes were no longer exaggerated. There was still some flushing of the foot when pendent, but no pain or hyperæsthesia. When discharged, May 6th, he could walk well, but was ordered to continue to use crutches as a measure of precaution, and had also a bandage applied daily. Dr. Kyle reports cultures from blood and nerves obtained at the operation as yielding purely negative results.[1]

Fig. 2.



On May 12th, S. reappeared at my clinic. He was able to walk a little, but refrained, at my request, from much use of the legs. The flush is lessened; the arteries do not throb. He stands and moves without pain. Above all the temperature of the pendent diseased foot is now less than that of the left member.

June 7th, S. is reported well and walking easily without crutches.

The tendency of recent writers seems to be, as I have said, toward considering erythromelalgia as a neuritis. But suppose we accept this view, and in the light of the two cases I have given it seems more than probable, it by no means sets the matter utterly at rest. Neuritis is becoming a sad puzzle. We may have it with paresis and little pain; we may have it without notable paresis and with horrible pain. It exists with or without myositis. Again, it may give rise to causalgia, joint-troubles, and alterations of nails and hair. It may fail to disturb nutrition or greatly to alter local heat; and lastly, if erythromelalgia be a neuritis, it may cause pain and flushing, and to these, increased enormously by dependency of the part, may add a rise of temperature which few local fevers show in acute inflammation.

You see that to give a name to a possible cause does not always help us. If each of these groups of symptoms be due to neuritis, why do they so vary? We may conclude that the nerves are subject, like the spine, to inflammations affecting only certain systems, but in the nerves the fibers of sense in their kinds, of motion and nutrition and vasal control are, as we think, scattered through the parent nerve, whence it seems hard to comprehend the possibility of isolated inflammation of systems. And yet to this we seem driven. The difference in effect between neuritis of a trunk, of the minuter nerves, or of the terminal plates has not as yet been fully considered. Certainly the constant, general, deep, and surface tenderness of erythromelalgia looks to me much like a condition of diffused, what I might call *terminal*, neuritis,

[1] The pieces of exsected nerve were hardened in Mueller's fluid for some weeks, imbedded in celloidin, and stained with carmine. On microscopic examination the musculo-cutaneous and two branches of the internal saphenous were found to be absolutely normal.

sure, like all nerve-end maladies or influences, to cause remote reflex effects. The exsected nerves taken at a part of the nerve-trunk within the flushed area show no signs of inflammation. We may therefore conclude that erythromelalgia is not, as some have thought, a truncal neuritis, but this very negative fact, taken with the symptoms, makes more probable the explanation of a nerve-end neuritis.

Let us return to look at the phenomena which follow letting the foot hang down. The man is seated. He remarks that to make the foot very red he must stand. At once as he rises the tint gets a brighter rose, and goes on as before described. This is really a vascular storm, and soon the throbbing vessels are less violent, and the temperature falls a little or is stationary. In most of these cases pendency causes first a rise and then later a fall of the mercurial column. In this man, as in some others, there is a fall, but less notable on the diseased side.

I think this may vary with the age of the disease. What we see is more than a mere vasomotor palsy. If it were only that, we could with ease flush the foot when, the leg being horizontal, we tie a ligature below the knee. You have seen how very slightly then the foot flushes. The upright posture and the long column of blood seem needed to get a great effect.

In this present case the muscles are, as to motion, over-responsive to electricity, and, as to sensation, but slightly responsive to the same agency. This is unusual. Indeed, to see excess of response in disease is very rare. Also, there is some wasting in these over-irritable muscles, and this adds to my surprise at their too ready reply to the battery in both forms.

Moderate ankle-clonus is present and right knee-jerk in great excess as a spastic reflex. Altogether the grouping of symptoms is uncommon.

The complex symptom-group here considered is not easy to interpret, especially in the entire absence of hysteria. Ordinarily—*apart from the erythromelalgia*—the signals in our present case would usually point to a spinal local and not extensive lesion, and remembering some other histories of erythromelalgia, we are not unprepared for this conclusion. Even then the riddle is but half read. Spastic states of spinal birth do not yield excessive electro-muscular excitations, or swiftly fail us after nerve-stretching and sections.

It is to be remembered that only the older cases present these quasi-spinal symptoms in grave forms. Allan Sturges' case had wasting, with only quantitative reduction of electric excitability. Whether clonus and spastic knee-jerk are ever only of peripheral neuritic origin we do not know. When I froze my own ulnar nerves, repeating Waller's experiments, the related nerves and muscles acquired for a time a wild excess of excitability to all mechanical impressions. It is really an open question.

The typical form, then, of erythromelalgia is probably a painful nerve-end neuritis with or without coexistent inflammation of the parent stems. Probably, too, although the skin may be of normal tint when the limb is at rest, the deeper tissues are always too full of blood, and the temperature supra-normal. Dependency only exaggerates these conditions, except that as to temperature it does not always do so. The abrupt lessening and final loss of pain, local fever, hyperæsthesia, and flushing under the influence of nerve-section and stretching, make it seem likely that much of these symptoms is reflex from inflamed nerve-ends. When they can no longer play mischievously on the centers they are released from certain of the morbid conditions which stand in the way of recovery. I have over and over tried to bring about the same results by hypodermatic use of opium. I have no record of success, but I see that a recent case is said to have been thus helped.

Perhaps some of you may have noticed that when the feet are pendent the temperature in the sound foot falls. This result a little surprised me. I do find mention of it elsewhere, and we shall at once study it with care; as a fact in thermal physiology it may be of interest.

In conclusion, I desire to add that I have seen cases of red neuralgia in which the disorder occurred at any part of the surface in isolated skin-spaces. I suspect, too, that in another species there are end-inflamed nerves in some of the viscera and in the muscles. I hope in future to report a small group of such cases.

VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE OF THE UTERUS, WITH A TABULATED REPORT OF CASES.[1]

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THE subject of vaginal hysterectomy for malignant disease is one that has excited much discussion. Those who condemn the operation have been numerous and emphatic in their denunciation of it, while those who indorse it have been as emphatic and positive in favoring the operation as their opponents have been in condemning it. But at the present time the warring factions are practically united as to the utility of the operation, and the advisability of hysterectomy for carcinoma is no longer questioned. With a mortality not exceeding 8 per cent., there is no need, it seems to me, of any discussion as to whether total extirpation is applicable to every case when carcinoma has been diagnosticated early. It is the operation of election when we are certain of our diagnosis. But the question of early diagnosis is the point to be emphasized, because upon it so much depends. It is this that has induced me to bring this subject before you at this time.

From October 31, 1891, to May 16, 1893, a period of less than nineteen months, I have performed eight vaginal hysterectomies.[2] During that same period I have had referred to me for operation twenty-eight cases of carcinoma of the uterus, in which the disease had advanced so far that I refused to operate, the broad ligaments or other organs being involved. I do not mean that total extirpation could not have

[1] Read before the American Association of Obstetricians and Gynecologists, June, 1893.

[2] Seven for carcinoma and one for complete prolapsus.

been performed, but the disease was not confined to the uterus, and would therefore return; or, we might more correctly say, would continue. My experience in this particular quite agrees with that of other operators with whom I have conferred upon this point. If we are to hope for good ultimate results from total extirpation of the carcinomatous uterus, the operation must be performed early, before the disease has advanced to any great extent. Therefore it is of the utmost importance to our patients that we make a diagnosis of the disease early. It has occurred to me time and again, that if there could be some means devised by which the patients during this period could be seen earlier by the family physician than is now the case, many valuable lives might be saved.

But how is this to be accomplished? In the same manner that the early operation for the removal of ovarian tumor was popularized. By educating the laity, by the diffusion of knowledge upon this point upon every possible occasion, it will only be a question of time when the good work will be crowned with success. To do this will require a patient and persistent effort on the part of the family physician, as it must be conceded by all that he will see the vast majority of these cases before they visit the specialist. He must educate the public mind up to the point of realizing the necessity of early diagnosis and operation, if all the benefits to be derived from surgical science are to be obtained. I am not here to find fault with or to censure the members of the profession, but to contribute my mite, if possible, to the great volume of medical knowledge for the benefit of humanity. With this object in view we should all lay aside prejudice and many of our old ideas regarding the early diagnosis of carcinoma of the uterus, and study it from the clinical data at hand. By doing this we shall be able to master many of the difficulties of early diagnosis that have heretofore surrounded the subject.

The fact that the family physician sees a case of malignant disease of the uterus in his own practice very infrequently is inclined to make him timid and uncertain in many cases as to the correctness of his diagnosis until he has watched the progress of disease for many weeks, and in some instances many months, when, alas, he realizes the fact that it is all too true that his first suspicions as to the nature of the disease were correct, and his patient is a subject of carcinoma of the uterus; but the disease has then advanced so far that relief is impossible. You may say that this statement is too broad; yet I assure you that it is only a fair one of facts as I have found them to exist in the past, and as I believe them to be at the present time. On the other hand, I not infrequently receive a letter from the attending physician at the time of the patient's first visit, in which he says that he was first consulted by the patient in reference to her present illness a day or two before her visit to me, yet the disease has advanced too far for any radical operation to be made. But the fault here is with the patient. The widespread belief in the community that women at or near the menopause are accustomed to unusual discharges, aches, and pains, and they must not pay any attention to these, as they will disappear when the change comes, is not at all true, but a *false* doctrine, beset with many dangers to women nearing the menopause. This false doctrine was the cause of the delay in many of the late cases just referred to.

Again, not a few women in the country districts will object to the proposed examination by their physician for months, possibly until the disease has invaded other structures than the uterus, and they only consent to a vaginal examination when they become alarmed by the frequent hemorrhages, at which time the disease may have advanced so far as to render the case hopeless. This can only be remedied by the determined effort of the family physician, urging upon his patients between forty and fifty years of age the stern necessity of looking at once after what may appear to the patient as a most trifling discharge from the vagina. It would only require a few years' time to educate the laity up to the point of realizing the necessity of early attention to these symptoms, as they now recognize the necessity of early operation for the removal of ovarian tumors. When women once understand the benefit to be derived from an early diagnosis and proper treatment in these cases, and contrast this with that of delay and death, they will present themselves to their family physician for examination earlier in the disease than they do at the present time.

The clinical histories of all cases coming under my observation for the first few months of the disease do not differ one from the other in a very marked degree. It is to this that I wish to direct especial attention, more particularly as we not infrequently hear the family physician say: "Why, doctor, this cannot be carcinoma, for there is lacking that horrible stench which I have been taught to believe is invariably present in all cases of cancer of the uterus." "Yes," I answer, "she will have it at no distant day, and when that comes the disease, as a rule, will have advanced so far that total extirpation will be out of the question, or at least a questionable operation." What we want is to be able to make a diagnosis before the disease has advanced to this point. It therefore behooves us to look carefully after the clinical history of all women at or near the menopause, who have in their past life enjoyed reasonable health, but who suddenly commence to complain of any symptoms of uterine disease.

. In every instance except two in the thirty-four carefully recorded cases comprising the basis of these remarks, the first symptom to attract the attention of the patient was a slight watery discharge from the vagina, and, at or about the same time, a sense of weight or fulness in the pelvis, and slight discomfort in the back. This slight watery discharge continues at irregular intervals, is sometimes more marked than at others, and it is several weeks, and in quite a large number several months, before other symptoms develop, attracting the patient's attention. If these cases were carefully examined at this stage of the disease there would be no difficulty in detecting malignant disease if it existed. When the disease has advanced still further, the most prominent and constant symptom consists in irregular discharges of blood from the vagina between the menstrual periods. At about this time the patient first observes that the watery discharges commence to irritate her person, and at times to have a slightly disagreeable odor. She now often complains of vague pain in the pelvis. Two of my patients said that the first symptom that they could associate with their disease was sharp shooting pain in the pelvis. In both of these cases the disease was far advanced when they came under observation. Within three or four months after the first symptoms were observed, 50 per cent. of all the cases developed some irritability of the bladder. I am aware of the fact that we may, and frequently do have all of these symptoms in women who do not have carcinoma. It is for this very reason that there is so much danger of overlooking the true cause of these symptoms while the patient is the subject of commencing malignant disease. But these symptoms, occurring at or near the menopause, in a woman who has always enjoyed excellent, or even good health, so far as her sexual organs are concerned, should not only suggest to the attending physician, but should demand at his hands an early, thorough, and complete physical examination, to determine whether or not the patient is the subject of malignant disease. The physician should be unusually cautious and anxious to make a correct diagnosis early, when so much depends upon it. If this course were pursued in every case, we should be able to see a much larger number of cases before the disease had advanced so far that nothing can be done to save them. The following eight are all of the cases of vaginal hysterectomy that I have performed since October 31, 1891, and are tabulated in the order of their occurrence. They all recovered, and are all living at this time; yet the three-year limit, the period at which it is conceded that they are exempt from recurrence, has not elapsed in any of the cases, and therefore it is too early to predict as to ultimate results.

No.	Age.	Symptoms.	Diagnosis.	Date of operation	Method of securing the broad ligaments.	Family physician.
1	Mrs. W., 49 years. III-para.	Hemorrhage, pain, fetid discharge, loss of strength.	Epithelioma of cervix.	Oct. 31, 1891	Clamps.	Dr. Byron Stanton, Cincinnati, Ohio.
2	Mrs. H., 47 years. I-para.	Continuous menorrhagia for three months. Great weakness.	Carcinoma of body of uterus.	Dec. 31, 1891	Clamps.	Dr. J. G. Senour, Troy, Ohio.
3	Mrs. S., 36 years. II-para.	Hemorrhage, fetid discharge, pain, general cachexia.	Epithelioma of cervix.	April 11, 1892	Clamps.	Dr. Byron Stanton, Cincinnati, Ohio.
4	Mrs. H., 48 years. V-para.	Fetid discharge, hemorrhage, pain.	Epithelioma of cervix.	Oct. 12, 1892	Clamps	Dr. W. H. DeWitt, Cincinnati, Ohio.
5	Mrs. A., 40 years. VIII-para.	Hemorrhage, fetid discharge, pain.	Epithelioma of cervix.	Dec. 15, 1892	Clamps. Closed peritoneal cavity with suture.	Dr. A. D. Murphy, Pleasant Plain, Ohio.
6	Mrs. McC., 41 yrs. I-para.	Unable to walk without great pain.	Complete prolapsus of uterus.	Jan. 12, 1893	Ligatures. Closed peritoneal cavity with suture.	Dr. R. T. Trimble, New Vienna, Ohio.
7	Mrs. C., 42 years. I-para.	Hemorrhage, pain, fetid discharge.	Epithelioma of cervix.	Feb. 1, 1893	Clamps.	Dr. T. J. Behreins, Middleton, Ohio.
8	Mrs. M., 52 years. III-para.	Hemorrhage, pain.	Epithelioma of cervix.	May 18, 1893	Clamps.	Dr. T. M. Wright, Troy, Ohio.

THE INFLUENCE OF THE SEXUAL ORGANS UPON REFLEX OCULAR NEUROSES.[1]

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IN this decade of pin-point concentration upon particular divisions of the wide field of medicine, and in a period in which we bend all our energy to

[1] Read before the Minnesota State Medical Society, May 22, 1893.

the study and observation of the morbid changes within an organ, or set of organs, we are too frequently guilty of charging the causes of various remote disturbances to these organs, and are frequently too ready to assert that in the organ in which morbid manifestations are found may reside the causes.

I believe that this statement is amply and abundantly verified in the special field of ophthalmology. In almost any issue of our current medical journals one may find reports of cases in which many diverse, interesting, and remote phenomena are, with great truth, traced to the eye as a cause. The "Record Book" of any ophthalmic surgeon contains the records of many such cases. The habitual finding of such associations, to the exclusion of other affections of the body, is dangerously conducive to a careless and superficial process of reasoning.

To demonstrate that the eye may be and is affected by peripheral and remote foci of irritation, through the medium of the "reflex nervous system," I shall present a few cases illustrating the close relationship that may exist between the sexual organs and the eye.

Case I.—Mr. H. A. M , twenty-two years of age, white, stated that, ever since he could remember, his eyes had caused him pain and annoyance. He had been unable to hold his eyes widely open on account of the dread of light and the profuse lachrymation that followed such an effort; he has worn glasses that partially corrected a hyperopia of high degree, and with these he was able to read but one or two minutes without inducing such severe pain that he had to cease. He complained especially of smarting and burning deep in the globes. The ophthalmoscope revealed in both eyes marked hyperemia of the optic discs, and a "water-silk" retina. In the left eye were noted a few patches of disseminated choroiditis, indicative of long-standing eye-strain and irritation. He did not use tobacco, but was addicted to moderate indulgence in alcohol. This young man was operated upon by Dr. J. H. Dunn about December 20, 1892, for paraphimosis, and the symptoms which had troubled him for a lifetime disappeared as if by magic. Within a period of one week he could hold his eyes wide open in bright daylight, and he could read without glasses for from half an hour to an hour without fatigue, whereas before, with glasses that partially corrected his refractive error, he could read but one minute. The lachrymation had disappeared, and the reflected light from the ophthalmoscope did not annoy him. Further, the fundi had been relieved of the signs mentioned. Circumcision gave perfect relief. The connection between cause and effect here is too obvious to escape us. The patient, a lifelong sufferer from asthenopia and retinal hyperesthesia, was immediately relieved by the removal of the irritation situated in the genital organs.

Case II.—I am able to report this case through the kindness of Dr. E. B. Patterson, of Michigamme, Mich. Dr. Patterson says: "A year ago an exceedingly bright, precocious child of five years was brought to me by his physician. The little fellow was affected with diplopia that annoyed him sorely. He had been seen by a number of competent ophthalmologists, and several pairs of glasses had been ordered, but with no benefit. Graduated tenotomy had been advised by some. His physician, a man of rare scientific attainments, had been unable to detect any intrinsic cause for the trouble, and had reached the conclusion that the phenomena were caused by some reflex irritation. After careful examination of the case I fully concurred in his opinion, and search was made for the source of the trouble. It was found that the child would often act as though there was some irritation of the genital organs, and by careful examination it was found that the prepuce was firmly adherent to the corona glandis, and that back of this there was extreme sensitiveness. A separation of the parts was advised, and subsequently made by his physician, who, on freeing the prepuce, found a considerable quantity of decomposed smegma. This was removed, and in two weeks the diplopia had disappeared, and with it much of the nervousness that the child had previously manifested.

The following two cases are reported to illustrate another phase of reflex irritation arising in the genital organs and overflowing to the eye:

Case III.—H. S., eighteen years of age, consulted me in the early part of 1893; he had been a sufferer with his eyes for two years. During this time he had been treated by a number of competent oculists, fitted with glasses, but had derived no benefit. His family history was good; he did not use tobacco or alcohol; he was wearing glasses for the correction of 0.5 D. of astigmatism in each eye. His eyes were exquisitely sensitive to any handling or irritation; and on throwing light into the eye a profuse gush of tears followed. The discs were very hyperemic, the retinal veins more than usually pulsatile, vision blurred, and the eyes tired after reading but a few words. I reduced the strength of his astigmatic glasses, put him on dilute hydrobromic acid and Fowler's solution, and practised his extra-ocular muscles with prismatic exercises. Under this treatment he seemed to improve for a time, but I was baffled by the very changeable condition presented by the eyes; at the time of one visit he was much better; the next—only a few days after—he was intensely irritable. After convincing myself that the cause was not wholly to be found in the eyes, I set about to find the source of irritation. After much questioning I found that he was a masturbator. He acknowledged that after the practice of the habit his eyes were much worse. Admonishing him of the vital necessity of stopping the habit, and administering hyoscin and bromids, the condition of the eyes steadily improved, and to-day they are much better than for several years. In this case the absence of the relapses, which were so conspicuous before, and his subsequent *steady* improvement, left no doubt of the bearing that the practice of his habit had upon the eyes.

CASE IV.—T. J. T., eighteen years of age, was a case very much like the preceding one, although at the start he confessed his failing, and suspected that it influenced the condition of his eyes. After correction of the refractive error, and the promise that he would correct his habits, improvement was as noticeable as in the previous case.

REMARKS.—The theoretic and experimental consideration of the "Reflex Theory," and of reflexes, forms one of the most enticing chapters in medical literature; and the clinical demonstration of them is most valuable, as it explains many otherwise obscure cases. The relationship of the sexual organs to the eye may at first thought seem very distant and problematic, until a clear idea of the possible conditions that may result from some derangement of the myriad number of reflex pathways is obtained.

We may, in many respects, liken this great system of afferent sensory fibers running to the great central depot, the cord and brain, and the out-going efferent fibers ramifying to every organ, to a great railway terminal. Just so long as the myriad sensory impressions are properly switched off on to the return track, all goes well; otherwise we have trouble. A reflex act is a dynamic response to a sensory irritation. This response may assume the form of vasomotor, secretory, or motor acts. The law of reflexes requires a return stimulus to go to or near to the seat of primary irritation; or to manifest itself in some normal trophic or vasomotor change. When this does not occur, pathology has its beginning. Given a normal condition of the reflex centers, we have these impulses returned to the organ whence they came, or manifesting themselves in natural vasomotor or trophic changes; but if we have some cause to intensify and elaborate the different impulses, it is not difficult to conceive that they may be bound off into a path of least resistance, and flow into some innocent organ or set of organs.

In the large majority of cases of eye-strain the impulse is either returned to the eye, and manifests itself in the form of asthenopia, blepharitis, or conjunctivitis, or is stored up in the brain, and manifests itself in one or other of the protean forms of headache. The subtle and molecular factors which influence the paths of propagation of reflexes are so mysterious that no definite laws have yet been advanced that would clinically hold good; although in this relationship of the eye and sexual organs, Pflüger's law might seem correct—that is, "Whenever an afferent cranial nerve evokes reflexes, the impulse travels among centers from before backward; but whenever an efferent spinal nerve has produced reflexes through the center of the cord, the impulses spread from behind forward."

After looking at the course and termination of these cases, we may, I believe, justly come to the following conclusions:

1. That foci of irritation in the genital organs may, through the medium of the reflex nervous system, induce various neuroses of the eye.

2. That while the precise laws that govern the passage of these impulses from other than their natural return channels is not known, it is probable that the impulses, greatly intensified by the condition of the reflex centers, which are connected by commissural bands, flow on to fibers that present a field of less resistance than the usual efferent pathway, and thereby flow into an innocent organ, with dire results.

3. That the full appreciation of this probability should be constantly in the mind of the ophthalmologist and neurologist, and stimulate both to search for all possible peripheral foci of irritation.

4. Lastly, that it frequently happens that the trouble disappears upon the removal of the remote point of irritation.

ON THE DISTRIBUTION OF ARSENIC IN THE BODIES OF ANIMALS POISONED WITH THIS SUBSTANCE.

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AFTER all the advances that have been made in the science of toxicology, the experimenter of to-day goes back to the time of Orfila for some of his methods. He studies the action of special poisons on the lower animals, and from this action infers what the action would be upon the human system. To a certain extent, these deductions are correct, but in other cases they are false; for it has come to be a fact well known in science that it is impossible to predict positively what the action of a poison on the human subject will be from its action on a particular animal.

There have been numerous experiments made to find to what extent toleration can be established in the lower animals when arsenic is administered to them with their food. Johnson and Chittenden[1] call attention to the fact that the rate of absorption, especially in the brain and muscular tissue, is influenced by the form in which the poison is administered; that is, whether it be in the form of a soluble arsenite or in the form of a partially soluble substance like ordinary white arsenic (As_2O_3). It may be noticed, in passing, that Chittenden, who has made a special study of the subject, and who has had special opportunities to ascertain the amount of arsenic in different por-

[1] American Chemical Journal, vol. ii, p. 332.

tions of the body of the human subject, believes that in case the poison is taken in a soluble form, much more will be found in the brain than when it is taken into the system as white arsenic.

The experiments mentioned later were made in connection with the examination of parts of the body of a man supposed to have been poisoned by arsenic administered in small doses, extending over a considerable length of time. In this particular case I found in the stomach and contents only a trace of arsenic; in the liver 0.68 grains of As_2O_3; in the duodenum and a part of the jejunum a distinct mirror of metallic arsenic, and in the brain, heart, and kidney, a mirror of the metal that could be verified by other tests to prove its identity, although the amount was too small to weigh accurately.

The method used in making the tests, both on the human subjects and on the dogs, was the modification of Gautier's process, as proposed by Chittenden and Donaldson, and described in the *American Chemical Journal*, vol. ii, p. 235.

In experiment No. 1, a dog, weighing about forty-five pounds, and in good health, was fed upon the poison mixed with his ordinary food. He was furnished with an abundance of clean water. The arsenious oxid was dissolved in a solution of sodium carbonate, so that it was in reality sodium arsenite. The amounts given were as follows:

Jan. 10	0.1 gr.	Jan. 15, P.M.	0.2 gr.
Jan. 11	0.1 "	Jan. 16, A.M.	0.5 "
Jan. 12	0.2 "	Jan. 16, P.M.	0.5 "
Jan. 13	0.2 "	Jan. 17, A.M.	1.0 "
Jan. 14	0.3 "	Jan. 17, P.M.	1.0 "
Jan. 15, A.M.	0.4 "		

Total arsenic given, 4.5 grains. A part of the last dose was rejected, but some was eaten the next morning. This was the first time that the animal appeared to be affected by the poison. Six hours after the last dose was swallowed the dog was chloroformed. The analysis of some of the parts gave the following results:

187 grams of liver contained	0.018 grs.	As_2O_3;
which calculated for the whole organ (447 grs.) is	0.045 "	"
The entire heart contained	0.001 "	"
One kidney contained	0.002 "	"

4½ ounces of blood contained a distinct trace, but less than 0.001 grain; 60 grams of muscle contained a slight trace only.

It seems that in this case tolerance was established up to about one grain. Much less than this at the beginning of the series of doses would, no doubt, have produced very distinct symptoms. The experiments were continued over eight days, and yet the amount found in the organs analyzed was small. This is especially noticeable in the liver, where less than one-twelfth of a grain was found, although a grain had been administered thirty hours previously to death, and several tenths of a grain at a later period. How rapidly then must have been the elimination from the system.

The second series of experiments was carried out by two students, under my direction, to ascertain the limit of tolerance with the use of arsenious oxid A dog of about the same size as the first was fed on raw meat, which had been rubbed with powdered arsenic. The following amounts were administered:

1st day	0.2 gr.	8th day	1.00 gr.
2d "	0.3 "	9th "	1.1 "
3d "	0.4 "	10th "	1.3 "
4th "	0.4 "	11th "	1.7 "
5th "	0.5 "	12th "	2.5 "
6th "	0.6 "	13th "	3.5 "
7th "	0.7 "	14th "	5.00 "

After the last dose the dog appeared to be sickened, and four hours afterward he was chloroformed and parts of the body were removed for analysis. During the two weeks the dog had been fed 19.2 grains of arsenic, without any apparent injury to his health; in fact, his coat was more glossy, his eyes more brilliant, and his spirits better than when the course of the experiments was begun.

There was obtained from one-third of the stomach and contents one grain of arsenic, giving three grains for the whole organ. One-fifth of the liver contained one-eighth of a grain of metallic arsenic, which, calculated for the whole organ, gave 0.84 grains of arsenious oxid for the entire liver.

The second experiment points to the fact that larger amounts of arsenious oxid than of sodium arsenite can be taken without causing symptoms of poisoning. This is what would be expected on account of the greater insolubility of the former. Again, as would be expected, the amount that the system will tolerate is much larger in the latter case.

When arsenic was given as sodium arsenite, two grains, in divided doses, caused symptoms of arsenical poisoning, while, when arsenic was given as arsenious acid, 3.5 grains were taken at a single dose without serious inconvenience. The amount deposited in the liver was large, very possibly up to the full capacity of that organ to retain the poison.

Exophthalmic Goiter in Mother and Daughter.—Kronthal (*Berliner klin. Wochenschr.*, 1893, No. 27, p. 650) has reported the case of a girl, twelve years old, who presented palpitation of the heart and tachycardia, protrusion of the eyeballs, enlargement of the thyroid gland, and infrequency of winking. To these symptoms there subsequently became added hallucinations and hysterical manifestations. The mother of the girl, forty-five years old, presented tremor upon exertion, palpitation and tachycardia, headache, sacral pain, prominence of the eyeballs, and infrequency of the act of winking. The throat felt tense, but there was no appreciable enlargement of the thyroid gland.

CLINICAL MEMORANDA.

TRAUMATIC ANEURISM OF THE THIRD DIVISION OF THE RIGHT SUBCLAVIAN ARTERY, TREATED BY INCISION AND DOUBLE LIGATURE; HEMORRHAGE CONTROLLED BY PROVISIONAL LIGATION OF THE FIRST DIVISION OF THE SUBCLAVIAN AND PRESSURE ON THE AXILLARY ARTERY.[1]

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JOSEPH MCG., a colored man, of good health and habits, aged thirty-seven years, on the 9th of December, 1892, received a gunshot wound of the right subclavian artery. The bullet, of thirty-eight caliber, was delivered in front at very short range, and, entering just above the clavicle and passing directly through, lodged under the skin of the back. The hemorrhage at the time of the accident must have been considerable to furnish a pretext for the patient's startling statement, to which with consistency he still adheres, that he lost "one gallon of blood." The character of the hemorrhage was that of a spurting stream. The hemorrhage was arrested by a styptic compress of alum, soot, and cobwebs. On the second day after the accident the wound bled twice, and again on the tenth day. These hemorrhages were arrested by the successful method practised in the first instance. On no subsequent occasion was the hemorrhage as profuse as at the time the wound was received. This fact may be explained by the acute anemia resulting from the first hemorrhage.

About ten days after the accident the patient observed a pulsating tumor in the track of the ball. This grew gradually, in the course of six weeks, to the size of a lemon. During a journey of several hundred miles from his home in Northern Louisiana to the hospital, the aneurism rapidly increased to the size of an orange. Upon admission into the Charity Hospital the tumor occupied much of the cervico-clavicular region. All of the aneurismal signs were present, the pulsation, however, being rather feeble. The right upper extremity was edematous and the pulse was absent at the wrist. The member was partially paralyzed, and had been so from the moment of the accident. The patient was quite asthenic and his pulse beat about one hundred per minute. The evidences of anemia were marked. The pressure-symptoms were urgent and entailed loss of sleep and much suffering.

The diagnosis of the condition was simple. The copious quantity of blood described could have come only from the subclavian artery. No smaller vessel could have delivered such a quantity of blood in the given time. The amount lost in a short while gave evidence of a large arterial wound. The size of the opening and the easy escape of blood made it less likely that the arterial coats were, in any way, involved in the aneurismal swelling. The direction of the bullet's track enabled us to locate the wound about the middle of the third division of the subclavian, the most favorable site for ligation. The rapidly increasing size of the tumor, its irregularity of outline and the feebleness of pulsation strengthened the belief that the aneurismal changes were going on outside of the artery. Then we had good reason to believe that the arterial coats near the wound would bear the ligatures indicated in the treatment of a traumatic aneurism; and we felt convinced by the conditions presented that there was easy room for the application of the double ligature in the third division of the artery. We determined at once to perform this operation, which, however, was only practical after incision of the sac and turning out the overlying clots. The difficulty of securing the bleeding ends of the subclavian artery, under the conditions presented, can only be properly appreciated by one who has either himself made or witnessed the attempt.

In 1875, in the closing days of the renowned case of right subclavian aneurism which Dr. A. W. Smyth, then House-Surgeon of the Charity Hospital, had successfully treated by the ligation of the innominate, common carotid, and vertebral arteries, nearly eleven years previously, the writer had the opportunity of witnessing an attempt somewhat like that contemplated in the present case. After the lapse of nearly eleven years, according to the published report, the aneurism returned in the original site. An abscess had formed in proximity to the aneurism, and the aneurismal sac had ruptured into the abscess-cavity. In this exigency an attempt was made to incise and evacuate the aneurismal sac and secure the feeding vessel. The hemorrhage was absolutely uncontrollable and baffled the attempt. Need we say, in passing, that this case of right subclavian aneurism, just cited, treated by a New Orleans surgeon, and in our Charity Hospital, twenty-eight years ago, still stands without a rival in the surgery of the arteries.

Recollecting the lesson impressed by that case, we determined to adopt all possible safeguards against hemorrhage. In the patient's anemic state, the loss of much blood would have speedily ended his life. It was impossible by pressure on the proximal side to control the aneurismal pulsation, owing to the deep position of the artery; so a provisional ligature was placed on the first division of the subclavian. With this ligature in the hands of an assistant, and a pad in the axilla to control a reverse current, the sac was incised freely and the clots removed. The wound of the artery was revealed, the bullet having torn away one-half of the circumference of the vessel. The artery was ligated on either side of the wound. The loss of blood was not considerable, and most of that which escaped came from the large and irregular sac of the aneurism. The mode of procedure adopted by no means secured a bloodless operation, but greatly lessened the hemorrhage and made ligation easily practicable.

The shock of the operation was very great. The hot saline solution, in the strength of one dram of common salt to the pint of sterilized water, was employed by transfusion, and the patient was carried over the crisis. The operation was performed in the Surgical Clinic of the Medical Department of the Tulane University of Louisiana, with the assistance of Dr. J. D. Bloom, Dr. H. J. Scherck, Dr. Wm. E. Parker, and Mr. Marion Souchon, the Interne of the Surgical Service. The

[1] Read at the Annual Meeting of the Louisiana State Medical Society, May 10, 1893.

aneurismal sac was packed with gauze and every possible precaution taken against sepsis. On the afternoon of the same day the following points were recorded: Temperature, 99° F.; pulse, 140; respirations, 40 per minute. On the second day the temperature reached 101° F., but thereafter never exceeded 99.5° F.

The symptoms of shock after the operation were extreme, and necessitated active hypodermatic stimulation. In the afternoon of the first day collapse seemed imminent. The pulse was 140 and the respirations 40 per minute, and the surface was bathed in perspiration. At this juncture, the hypodermatic injection of one-sixtieth of a grain of atropin sulfate was practised and very promptly arrested the exhausting drain. The very happy effect of this special stimulant, which I desire to commend in such cases, turned the scale of the patient's chances, and from that time he began to improve.

Food and stimulants by the mouth and rectum were employed guardedly with the view of maintaining the circulation at the lowest ebb compatible with the necessities of the general nutrition.

The operation-wound for applying the provisional ligature healed primarily; the open aneurismal sac healed gradually by granulation without any untoward symptoms. On May 7th, all the wounds were perfectly healed. Pulsation reappeared in the radial artery on the 6th of March, and has since remained, but is feeble. The edema has subsided. The paralysis resulting from the wounding of nerves of the brachial plexus remains, but the usefulness of the limb is daily improving. The patient was discharged from the hospital on the 10th of May, all the local conditions presenting the evidence of a complete cure.

The fortunate location of the wound of the artery, the conditions that favored ligation on either side of the opening, and the methods employed in the control of hemorrhage during the operation were all circumstances favoring the successful ending of this case.

A CASE OF RESUSCITATION OF THE NEWBORN.

By A. H. P. LEUF, M.D.,
of Philadelphia.

The following case seems to me of sufficient general interest as showing what can be done by perseverance in the saving of the lives of the newborn.

On February 13, 1892, I was called to see a young married woman, a housewife, who was eight months pregnant with her first child. Her temperature was 104° F. She complained of backache, general soreness, sore-throat, coryza, anorexia, emesis, and diarrhea. She also had a commencing papular eruption of the face. On the following day (the 14th) the eruption was well marked and undoubtedly rubeolous. She had twelve liquid stools this day up to noon. There had also developed a racking cough. The temperature was 104° F. In the evening her temperature had dropped to 103° F.; she had slept, and was slightly better. On the next morning (the 15th), with the eruption fading from the head and neck, but more prominent upon the arms and belly, she complained of lancinating abdominal pains since midnight. There were no discernible fetal movements. The temperature was 101½° F.; the pulse 128. In the evening there was a discharge of a little blood from the vagina, followed by nagging pains at intervals of from five to ten minutes. The temperature was 103½° F.; the pulse full and strong. On the following morning (the 16th) labor set in; the os was well dilated, the membranes protruded, and the head was within easy reach. I noticed, by palpation and inspection, distinct fetal movements on the right side near the fundus, but these the mother did not feel. I saw the patient again at noon. The membranes ruptured at 12.50 P.M. The head was in the L.O.A. position. The pains came oftener and were effective, until the head was upon the perineum, at 4 P.M., after which time the pains were weak and lasted only a few moments at a time. I now gave quininæ sulph., gr. v, and later another dose, following this with ʒj of Squibb's fluid extract of ergot. Labor began again in earnest about 6.05 P.M., and the head was expelled at 6.45 P.M.

I found the cord twice coiled around the neck and so short that it was taut. There was no pulsation. The head and face of the child were cold and the skin had a macerated appearance. I tied one of the loops surrounding the neck with two tapes and severed the cord between them. I now rapidly delivered one shoulder and then the other, and extracted the child without waiting for a pain. The uterus contracted well. The mother was directed to keep her hand upon it and tell me if it became soft; but I believed that the ergot and quinin would be answerable for this, and they were.

I then attended to the child, trying various methods of artificial respiration, without result. There was no heart-beat, no respiration, no sign of life in the perfectly limp body. There was not the slightest reaction to douches and plunges of hot and cold water, or to flagellation. I also faithfully tried Sylvester's method of artificial respiration, without any effect. The child was also thrown up repeatedly for a foot or more and caught under the arms as it descended, with the same result, though this method had served me well under similar circumstances when the Sylvester method had failed.

After the lapse of nearly thirty minutes in vain efforts at resuscitation by these various methods, I laid the child down on a woolen cloth, with its face up and head well back. A clean handkerchief was then spread over its mouth and nostrils. With the thumb and index finger of my right hand I held the nostrils shut, while my left hand partly surrounded the chest. The child's chin having been depressed and the tongue pulled forward, I blew into the child's mouth with moderate force until I met with some resistance. At the same time the chest expanded and the belly protruded. As I withdrew my mouth my left hand compressed the chest from side to side, as well as from before backward, while the belly—at least its upper part—was compressed by my wrist. Of course, during this enforced expiration I relaxed my hold upon the nostrils, withdrew the pressure of my hand and wrist from the chest and belly, and again applied my lips to those of the child to force in more air. This proceeding was repeated as regularly as possible, twenty-five to thirty times per minute. After several minutes there was occasionally a faint cardiac beat discernible with the stethoscope. This recurred at intervals of several seconds. In a few minutes more there was a gasp and a spasm of the lips, the latter being distinctly perceptible in contact with my own lips

through the linen. Another gasp did not follow for at least two minutes, though the heart-beats were gradually becoming more frequent, and the lips and cheeks began to assume a pinkish tinge. Other gasps followed at seemingly rather lengthy intervals, each becoming shorter, until there was only one minute's interval between the ninth and tenth gasps by actual time, the father of the child holding the watch before me. The gasps recurred at intervals of thirty seconds, and then more rapidly, until irregular breathing was established. The forced respiration was, nevertheless, continued until voluntary inspirations appeared every three or four seconds. At this time the breathing was about as follows: A gasp (almost a hiccough); quiet for five seconds; and then an inspiration; another in three seconds; another in two seconds; a gasp in two seconds—and so on for some time. The breathing gradually became more regular, and was watched by the father.

Attention was now paid to the mother. The placenta was found in the vagina and extracted. A binder was applied to below the hips, with a hypogastric pad. The vulva was greased liberally with lard to allay itching, which it did at once. The perineum remained intact, not even the fourchet being torn.

The child was undersized, having been one month prematurely born. It was greased all over with lard and the eyes were washed. The umbilicus was dressed with a plain piece of linen cloth, a belly-band was applied, and the child rolled up in warmed cotton. Meconium had been expressed by the respiratory maneuvers. The maternal temperature after the delivery was 98½° F.

The mother and child progressed nicely, the former to complete recovery, but not without a reappearance of the eruption after labor, as was to have been expected. The child developed a characteristic rubeolous eruption, with slight cough and considerable coryza, on the twelfth day (February 27th). He received no treatment other than a little aromatic tea, mother's milk, and careful guarding against exposure to cold. On the 29th the eruption disappeared. The child is now strong and well, in the latter half of his second year.

2353 NORTH SEVENTEENTH STREET.

SUCCESSFUL NERVE-STRETCHING FOR THE CURE OF SCIATICA.

BY JAMES KENNEDY, M.D.,
OF SAN ANTONIO, TEXAS.

WM. C. M., forty-two years old, a machinist, some twelve years ago was engaged in moving a house when, owing to the occurrence of an accident, the supports of one corner gave way, and he was crushed to the ground under the hand-spike that he held. He was confined to his bed on account of this wrench, as he termed it, for about three weeks, at the expiration of which time he recovered sufficiently to resume his duties. Some months after the occurrence of the accident he felt pain over a region corresponding to the track of the great sciatic nerve, but most marked over the point where this nerve emerges from the pelvis. These attacks, which at first occurred at intervals of many months, became much more frequent, and increased in severity until April, 1893, when he was seized with the most severe attack from which he had ever suffered, being unable to turn in bed or make any movement of the body whatever, on account of the intensity of the pain. On attempting to turn over for the purpose of permitting an examination, he shrieked in agony. According to his own statement, all remedies had been tried, and some little improvement had followed the use of each, but no means of cure had yet been found.

I did not care to follow in the beaten track which so many had pursued in the treatment of his case, and which had yielded such poor results, so I proposed nerve-stretching as a possible means of cure.

He acquiesced in my proposition, and the operation was performed in the following manner: The patient was anesthetized, and after due aseptic precautions had been taken, an incision four inches in length was made through the skin and fascia on the posterior surface of the thigh, just a little above its middle, and the muscles exposed. The biceps and semi-membranosus were gently separated by means of the finger, and the nerve, thus exposed, was lifted out through the wound and moderately forcible traction made upon either end, and then returned. The wound was closed antiseptically, and perfect union took place by first intention within a few days. A remarkable feature of the case is that the pain immediately subsided, and only the slight discomfort incident to the incision remained. Recovery was complete, and remained to the present time (July 10, 1893).

MEDICAL PROGRESS.

Trephining for Subdural Hemorrhage, followed by Osteoplastic Resection.—RIEGNER (*Deutsche medicin. Wochenschr.*, 1893, No. 28, p. 667) has reported the case of a child, six years old, who fell from the height of the second story of a dwelling, losing consciousness. The pulse was slowed, and a hematoma, as large as the palm of an ordinary hand, formed in the left temporal region, and a second, as large as a plum, formed in the right parietal region. There was distinct paresis of the right half of the body, including the face. This was not so marked a day later, the loss of consciousness likewise not being so profound. The child could be aroused by loud cries, but spoke no word. By the fourth day the blood-swellings were sufficiently absorbed to permit of the recognition of a fissure of the skull in the left temporal region, a little in front of the external auditory meatus and reaching to the sagittal suture. Clonic convulsions took place in the muscles of the right side of the face, and a day later in those of the extremities of the same side, at times continuing uninterruptedly for hours. At the same time choking of the optic disc could be seen to have begun; consciousness had been quite restored, but speech remained entirely in abeyance. With the idea of relieving a subdural hemorrhage in the left frontal and central regions, resulting from rupture of the middle meningeal artery, trephining was undertaken on the sixth day, but the hemorrhage was found to have taken place beneath the dura, upon opening which fluid and clotted blood and débris of cerebral tissue were evacuated. Pulsation of the brain, which had previously been absent, soon returned. The wound was gently packed with iodoform-gauze and the flaps only partially sutured. The symptoms at once receded, the motor aphasia, however, but slowly.

A proposition at this time to close the defect in the skull by resection of the adjacent bone was declined. The child's vocabulary grew until he ultimately acquired a considerable range of language. A year and a half after the accident the parents came with a request that operative measures be undertaken, as the wound manifested no tendency to close spontaneously. Accordingly, a segment of bone was removed from the skull in front of the defect, which it was made to close. A little additional skin was required and was transplanted from the thigh. The result was in all respects a satisfactory one.

Epithelial Pearl-tumor of the Iris Following Implantation of an Eyelash in the Anterior Chamber.—At a recent meeting of the Ophthalmological Society of the United Kingdom, Cross and Collins (*British Medical Journal*, No. 1698, p. 118) reported the case of a boy, eight years old, who presented himself for loss of vision in the right eye, seven months after a wound of the eye by a piece of wire. The eye was free from inflammation, the tension was normal, and there existed a traumatic capsular cataract, with posterior synechiæ. At the upper inner segment of the anterior chamber was a small nodule, from which an eyelash passed downward in front of the iris. An operation was undertaken to remove the eyelash and, if possible, the small nodule, which was diagnosticated to be an epithelial implantation-cyst growing from the root-sheath of the cilium. The eyelash was readily removed, but the cyst was closely adherent to the iris, which, in turn, was so fixed by adhesions that it could not be removed entire, but came away piecemeal. The wound healed readily. Two months later the tumor had commenced to grow again. The patient was lost from observation for nearly a year, when he returned with great irritability, lachrymation, and photophobia of the right eye. The tumor had increased greatly in size, and as the left eye was sympathetically irritated, and the first operation had been so difficult, the right eye was enucleated. The tumor was found to be surrounded by pigmented iris-tissue and free from cornea, vitreous, and ciliary body. The mass situated in the iris proved to be a cyst, with opaque, white contents, and lined by laminated epithelium, the cells in contact with the iris-tissue being the best developed, the innermost ones being flat and scaly. The contents of the cavity consisted of fat-globules and polyhedral cells, in which no nucleus was stained. They were probably epithelial cells undergoing degeneration. The papillary border of the iris was united by newly-formed fibrous tissue to the anterior capsule of the lens.

Successful Extirpation of the Prostate Gland.—At a recent meeting of the Royal Society of Physicians of Vienna, Prof. Dittel (*Internationales klin. Rundschau*, 1893, No. 25, p. 938) reported the case of a robust farmer, thirty-two years old, who complained only of hematuria. Careful examination failed to detect the presence of a stone within the bladder, but upon manipulation of the abdominal wall a tense, oval tumor could be felt, while through the rectum the prostate was found considerably enlarged. The tumor persisted after the removal, by means of the catheter, of all urine from the bladder. On endoscopic examination a bulbous prominence was seen upon the right wall of the bladder, from the surface of which blood flowed. The bladder was opened through a supra-pubic incision and the bleeding prominences removed by means of the curet. An incision was now made from the coccyx to the anus and continued around the latter; the coccyx was removed; an incision was made through the rectum upon the right side; the capsule of the prostate was opened and the gland enucleated. The growth looked like a fibroma, but the microscopic appearances did not conform to those of any known type of neoplasm. The cavity created was packed with iodoform-gauze and the bladder was drained. Upon filling the bladder none of the fluid used escaped, but in the course of a few days the gauze emitted a urinous odor. The wound, however, grew progressively smaller. The success of the operation is ascribed to the anatomic fact that the urethra did not pass through the prostate, as it commonly does, but was superimposed upon the gland.

Amblyopia of Dental Origin.—At a recent meeting of the Paris Society of Ophthalmology, Despagnet (*Le Mercredi Médicale*, No. 24, 1893, p. 294) reported the case of a woman, twenty-six years old, in which the right eyeball had been enucleated on account of a neoplasm, probably of tuberculous origin. For three months vision had been failing in the left eye, the acuity being reduced to 1/xx. There was also complete external ophthalmoplegia. The fundus oculi presented only dilatation of the veins. Tuberculosis of the brain was suspected, especially as hysteria could be excluded. Three weeks after the first examination a slight suffusion was observed at the outer margin of the pupil. On examination of the teeth the second upper bicuspid upon the right side was found to be carious, and the adjacent inflamed gum presented a small fistula. The supraorbital and the infraorbital nerves were not tender upon pressure, but at night the patient felt pain upon the corresponding side of the head. The tooth was at once removed, and within forty-eight hours the visual acuity had improved to 3/x. The improvement was progressive. A month later a small area of necrosis was found upon the upper jaw; this was removed and a small quantity of pus evacuated. Eight days later the visual acuity had returned to normal.

Hydatid Cyst of the Lung opening into the Pleura.—At a recent meeting of the Paris Society of Surgery, Delangeniére (*Rev. gén. de Clin. et de Thérap.*, No. 24, 1893, p. 381) reported the case of a man, twenty-five years old, who three years before was suddenly seized with violent pain in the left side of the chest, which disappeared in the course of a few days. Some eighteen months later he was again seized with pain upon the same side, but at a different point; and a generalized urticaria developed. Soon the signs of a pleural effusion appeared, with marked dyspnea and displacement of the heart. Upon puncture, more than three pints of greenish fluid were evacuated; upon a second puncture, a few days later, more than two pints of purulent fluid were evacuated. The patient declining resection of the ribs, a simple opening was made and flaky membrane and the debris of an hydatid cyst evacuated, and drainage was instituted. In the course of two months numerous hydatids were thus expelled, but finally suppuration set in and hectic fever developed. Finally the sixth, seventh

and eighth ribs were resected for a distance of 4½ inches, and adequate drainage provided for, with the result that in the course of a couple of months complete recovery ensued.

Nephrectomy for Ureteritis.—JAMES ISRAEL (*Berliner klin. Wochenschr.*, 1893, No. 27, p. 641) has reported the case of a man, twenty-eight years old, who for eight years had attacks of left-sided renal colic recurring at intervals of three weeks, with pain in the course of the ureter in the intervals between the paroxysms. Hematuria was frequent and red blood-corpuscles were at all times to be found in the urine. A definite history of gonorrhea could not be obtained. In the belief that the trouble was due to a renal calculus, the kidney was exposed and incised, but no foreign body was found, although the pelvis and calices were dilated. The wound in the kidney was closed by means of five catgut sutures and united by first intention. The operation was followed by no improvement in the man's condition, so that, as soon as recovery had taken place, the ureter was exposed and found to be inflamed, thickened, adherent, and stenotic. At a loss as to how to proceed, the wound was left open, but as the colic persisted, the kidney was extirpated two days later. The removed organ was of normal size, but, upon section, displayed marked hydronephrotic dilatation of pelvis and calices. The relief was immediate and maintained.

The Prognostic Significance of the Pupillary and Patellar Reflexes in the Algid State of Cholera.—At a recent meeting of the Société Médicale des Hôpitaux, GALLIARD (*Rev. gen. de Clin. et de Thér.*, 1893, No. 26, p. 414) reported the results of examinations of the pupillary and patellar reflexes in 161 cases of cholera in the algid stage, of which 75 recovered and 86 died. Mobility of the pupil or a slight degree of paretic sluggishness of contraction was of no significance. Immobility of the pupil, on the contrary, indicated gravity of prognosis. Exaggeration of the patellar reflexes often preceded an unfavorable termination; the preservation of the normal reflexes was a more favorable indication; their abolition was observed in some cases that recovered, and seemed to be of no special significance. When pupillary and patellar reflexes where both preserved the chances of recovery were as two to one; with their abolition the chances of a fatal termination were as two to one.

Auscultatory Percussion in the Diagnosis of Fractures of Bone.—VAJANA (*Rif. Med.; Wien. med. Presse*, No. 28, 1893, p. 1116) has found that if a stethoscope be applied over a long bone, while at the same time percussion is practised at a different point by means of a plessimeter and hammer, a distinct and rather disagreeable sound will be heard. If, however, the continuity of the bone is broken, the sound loses its disagreeable character as soon as the line of fracture is passed by the percussing instruments. The difference becomes more evident if a comparison be made with a corresponding part of the opposite side of the body.

Sudden Death in a Case of Hysterical Vomiting.—ROBINSON (*Lancet*, No. 3641, p. 1380) has reported the case of a woman who, from the age of puberty, displayed varied manifestations of hysteria. After marriage she bore two children, and the hysterical symptoms remained in abeyance; but after some time obstinate vomiting set in and continued to a fatal termination, which occurred during the night at the end of some eighteen months, several hours after a light meal. During life there was no evidence of organic disease, and after death there was found little abnormality beyond dilatation of the stomach.

THERAPEUTIC NOTES.

Sero-therapy of Pneumouia.—LAVA (*Giorn. della R. Acad. di Med. di Turino*, January, 1893; *Rev. des Sci. Méd.*, etc., No. 83, p. 112) has reported the results arrived at from a study of ten cases of pneumonia treated by injections of blood-serum and of extracts of the viscera of pneumonic animals. The injections occasioned no reaction, immediate or remote. No subjective discomfort followed the injection of the serum or extracts of the viscera of rabbits, although transitory disturbance followed injection of the serum of dogs. The injections exerted no immediate decided influence upon the temperature, although there was a progressive decline. The frequency of the pulse was at once and permanently diminished. The frequency of respiration underwent a similar change. The crisis followed soon upon the injections, and was limited in duration. Convalescence was usually speedy and recovery resulted without complication.

Chlorobrom for Sea-sickness.—After an extended trial of chlorobrom in marine practice, the patients remaining under observation for some months, LEDINGHAM (*Lancet*, No. 3643, p. 1515) pronounces this the most satisfactory remedy yet produced for the treatment of sea-sickness. The agent was found especially valuable in those cases in which the patients, though not suddenly and violently sick, were in a state of chronic misery, with headache, nausea, great depression, sleeplessness, and anorexia. As a rule, the nervous symptoms disappeared and the patients gained refreshing sleep and generally made a rapid recovery. The ease of administration, the safety of the remedy, and the complete absence of objectionable symptoms are points of great importance. The solution was also found exceedingly useful in many cases of insomnia and nervous derangement.

Oil of Gaultheria for Alopecia.—At a recent meeting of the Paris Society of Dermatology, HALLOPEAU (*Wien. med. Presse*, No. 24, p. 943) recommended employment of oil of gaultheria in the treatment of alopecia. The agent proved far superior to oil of cinnamon. It did not cause irritation, so that the effect must be ascribed to a destructive influence upon the cause of the condition. The best results were obtained from a mixture containing equal parts of ether and oil of gaultheria.

For Myalgia.—

℞.—Liniment. chloroformi } . āā f℥iv.
Liniment. aconiti }
Tinct. opii . . . . f℥iij.
Liniment. saponis . . ad f℥iv.—M.
Ft. liniment.
S.—To be well rubbed into the painful parts.

The Practitioner.

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INSANITY FROM INTOXICATION AS A DEFENCE TO CRIME.

THE rule laid down by the Supreme Court of Kansas concerning the responsibility of a person who, at the time of the commission of an alleged crime, has sufficient mental capacity to understand the nature and quality of the particular act or acts constituting the crime, and the mental capacity to know whether they are right or wrong, that he is generally responsible if he commits such act or acts, whatever may be his capacity in other particulars, was forcibly challenged in the case of State *v.* O'Neil, just reported (33 Pacific Reporter, 287). The theory of irresponsibility from an irresistible or uncontrollable impulse was ably presented. Several authorities were cited and the Court also referred to a lengthy article "On the Legal Aspect of Insanity," published in 1 N. W. Law Rev. 1, which stated, among other things, that "it would be difficult to crowd into the same compass more erroneous ideas than are found in the charge of the Court in the GUITEAU case." The Court said that it had examined these authorities and had also read similar articles in the magazines upon legal or forensic medicine, which support and even go further than the views expressed in the Law Review.

Some of the articles in the medico-legal journals assert that all crimes result from heredity, and, therefore, that all persons committing alleged offences should be considered irresponsible, and be subjected to treatment for disease only; not for crime. The decisions cited were called sporadic cases, and against the overpowering weight of authority. As declared by this Court early in the State's history: "It is possible that an insane, uncontrollable impulse is sometimes sufficient to destroy criminal responsibility, but this is probably so only where it destroys the power of the accused to comprehend rationally the nature, character, and consequences of the particular act or acts charged against him, and not where the accused still has the power of knowing the character of the particular act or acts, and that they are wrong. Indeed, it would seem dangerous to society to say that a man who knows what is right and wrong may, nevertheless, for any reason, do what he knows to be wrong without any legal responsibility therefor. The law will hardly recognize the theory that any uncontrollable impulse may so take possession of a man's faculties and powers as to compel him to do what he knows to be wrong and a crime, and thereby relieve him from all criminal responsibility. Whenever a man understands the nature and character of an act and knows that it is wrong, it would seem that he ought to be held legally responsible for the commission of it, if in fact he does commit it." And in a later case the Court adopted the views thus expressed upon uncontrollable impulse. Nor is it now inclined to adopt the theories of psychologic enthusiasts to overthrow the long-established criminal practice in this class of cases, which is based on human experience from earliest times. The Legislature might, very appropriately, pass an Act permitting the State or the accused to have the question of insanity tried before the main trial upon the information or indictment. In such a case a jury of physicians might be required to be summoned to determine the sanity or insanity.

In the case under consideration evidence was offered upon the part of the accused showing that he had inherited an appetite for intoxicating liquors; that he had indulged that appetite during life; and that the habit for drink had grown upon him so that he had the reputation of being an habitual drunkard. It was further insisted, the evidence tended to prove, that at the time of the killing he was insane from alcoholism. The Court, however, instructed the jury, among other things, that voluntary intoxication is no defence to murder in the first degree, unless such in-

toxication should be so extreme as to rob the mind of the power of premeditation and deliberation. Hence, if it was found that the accused committed the act of killing as charged, and that at the time that he did so he was in a state of intoxication caused by his voluntary action, he was guilty of murder in the first degree, unless it should be further found that such intoxication was so extreme as to prevent his mind from the exercise of deliberation or premeditation; in which latter case he would be guilty of murder in the second degree, or manslaughter in some of the degrees. If the jury should believe from the evidence, beyond a reasonable doubt, that the accused did the killing at the time that he was so drunk as to be incapable of entertaining deliberation and premeditation, and also was incapable of entertaining the elements of purpose and malice, and that he had no previous knowledge that when intoxicated that he was liable to commit acts of violence upon his wife, whom he was charged with murdering, or others, as a consequence of such drinking, it could not find him guilty of murder in either the first or second degree.

When a person is shown to have been in the habit of becoming intoxicated, and it is further shown that when intoxicated he is likely to commit acts of violence upon his fellows, and endanger their lives or safety, and such person is shown to have knowledge of such fact, and, having such knowledge, voluntarily becomes intoxicated, then, and in such a case, such person would be as fully and entirely responsible for acts of a criminal nature committed by him while in such state of intoxication as though the act had been committed by him while not intoxicated. When insanity is set up as a defence to crime committed, the rule that the jury must ever keep before their eyes and minds in determining the responsibility of the accused is this: "Was the accused, at the time of doing the act complained of, conscious of the nature of his act, or did he know that it was wrong to do it?"

BISHOP, in his work on *Criminal Law*, says: "When a man voluntarily becomes drunk, there is the wrongful intent; and if, while too far gone to have any further intent, he does a wrongful act, the intent to drink coalesces with the act done while drunk, and for this combination of act and intent he is liable criminally. It is, therefore, a legal doctrine, applicable in ordinary cases, that voluntary intoxication furnishes no excuse for crime committed under its influence. It is so even when the intoxication is so extreme as to make the person unconscious of what he is doing, or to create a temporary insanity." "Again, the law holds men responsible for the immediate consequences of their acts, but not ordinarily for those more remote. If, therefore, one drinks so deeply, or is so affected by the liquor that for the occasion he is oblivious or insane, he is still punishable for what of evil he does under the influence of the voluntary drunkenness. But, if the habit of drinking has created a fixed frenzy or insanity, whether permanent or intermittent—as, for instance, delirium tremens—it is the same as if produced by any other cause excusing the act; for whenever a man loses his understanding, as a settled condition, he is entitled to legal protection, equally whether the loss is occasioned by his own misconduct or by the dispensation of Providence." If drunkenness produces insanity through delirium tremens or *mania a potu* or other disease, and the accused at the time of the homicide has no sufficient capacity or reason to enable him to determine between right and wrong as to the particular act he is doing, or has no power to know that the act is wrong and criminal, he would not be responsible. In cases of delirium tremens or *mania a potu*, the insanity excuses the act, the frenzy being, not the immediate effect of indulgence in strong drink, but a remote consequence superinduced by antecedent drunkenness.

A HYGIENIC SYMPOSIUM.

THE completion of the fiftieth year of the doctorate of MAX VON PETTENKOFER has been celebrated by the publication of a volume of over seven hundred pages, consisting of original contributions from his pupils and colleagues. The name of the master is familiar to all students of physiology and hygiene; it is indissolubly associated with important analytic processes and with ingenious speculations as to the propagation of disease, and all can join in the wish, expressed in the dedicatory preface, that the great teacher may continue many years to be an ornament to science and a benefactor to humanity.

Apart from the appropriateness of the testimonial and its superiority over a mere collection of laudatory speeches, the volume has value as showing the trend and results of the school of hygiene that PETTENKOFER has developed. He has long been known as the advocate of the "localistic" theory

of the propagation of infectious disease. His researches on the movement of the subsoil water and its relation to the development of enteric fever and cholera have been extended by many of his pupils, and in his recent essay, "The Present State of the Cholera Question," he has brought all the resources of his long experience, scientific methods and brilliant style to bear in support of his views.

The volume contains twenty-eight original contributions, covering almost the entire field of hygiene. Bacteriology receives a comparatively small share of attention, and there is very little reference to analytic methods. With the exception of a paper by Buchner on the self-purification of streams, there is nothing on the subject of water-supply. Some American food-products are treated with suspicion and criticism. Hasterlik refers to a charge that horse-meat is substituted for beef in the imported canned goods, but in the examination of seven of the most prominent brands, finds no such substitution. Incidentally he gives methods of distinguishing between beef and horse-meat that will prove of value in general food-inspection.

Sendtner presents a summary of the more important results of the inspection of food and drugs in Munich. Among these may be noted the detection of the employment of sulfites for preserving canned vegetables. Attention is called to investigations that have shown that sulfites are injurious. Some cosmetic articles contained lead or mercury or both. Over two thousand samples of enamelled cooking utensils have been examined since 1884, sixty-five per cent. of which were found to yield to boiling vinegar marked amounts of lead. As lead is one of the most insidious and frequent sources of chronic poisoning, this record has great practical interest. As might be expected, the cheapest goods were found to be most dangerous. American lard is severely criticised. Sendtner found a large proportion of the samples to be adulterated with cotton-seed oil, and to be objectionable in taste and odor. The latter statement is rather surprising. It is also stated that oleomargarin is at present of much inferior quality than formerly, and the hope is expressed that some means may be secured for improving the keeping qualities of cocoanut oil, which affords a cheap and wholesome fatty food.

Dr. Franz Spaet contributes a lengthy statistical study of enteric fever in central Bavaria from 1870 to 1890. The etiologic influences are considered in detail and, as might be expected from a pupil of Pettenkofer, the water-carriage theory is declared to be disproved in almost every instance, while fluctuations of the subsoil water are looked upon as the most striking features. Of the same tenor are two articles on enteric fever in Munich, one by Schuster relating especially to the mortality in the the army barracks, and another by Eisenlohr and Pfeiffer relating to the mortality in the entire city from 1888 to 1892. The paper by Schuster furnishes a highly interesting summary of the course of the disease since 1851. From then until 1881, with occasional abatements for a year or two, Munich has had an annual death-rate from this disease of from one to three per thousand. In 1881 a striking decrease occurred, the ratio falling to less than two-tenths per thousand per year, and the figures have become more favorable each year, so that the city, once truly designated as a "typhoid nest," has become practically free. It seems to be demonstrated that this improvement has not depended on the improvement of the drinking-water. A partial reform in that respect, secured in 1865, was not followed by material change in the death-rate from enteric fever, and the marked fall in mortality that has continued to the present time began two years before the general reconstruction of the water-supply. It appears that in Munich, at least so far as concerns enteric fever, the improved sanitary condition has depended upon improved drainage and municipal management rather than upon the water-supply. In fact the authors of the papers under notice lay much stress upon the beneficial results of the establishment of central abattoirs, and the abolition of the private slaughter-houses.

It is in this field of hygienic discussion that the features of the Munich school are most strongly exhibited, especially in contrast to that of the Berlin school. Pettenkofer and his followers have never given a hearty consent to the theories of the microbic origin of disease. Forced by unanswerable demonstrations to accept some of the positions taken by Koch and his school, they have appeared rather as critics than as propagandists of such doctrines. The papers here quoted are able and exhaustive, the statistical data are trustworthy and abundant, and, whatever may be our views as to the issues involved, there seems to be no doubt that enteric fever and similar diseases are not infrequently conveyed by other channels than polluted water, and further, that water may be highly contaminated, as judged by certain technical standards,

and yet cause no disease. The critical attitude of the Munich school in respect to the general tendency of sanitarians has, doubtless, a scientific value. It restrains hasty generalization and superficial investigation, and forces the closest inquiry into the data of each case.

In an essay on the self-purification of streams, BUCHNER shows that light has a decided germicidal power. Even diffuse daylight in autumn is sufficient to kill *B. typhosus*, *B. pyocyaneus*, and *B. coli* in five hours. These facts must have great importance in connection with the subject of water-purification by storage, and tend to show that in spite of the somewhat alarming statements to the contrary, a sewage-polluted river may, by certain methods, be at least greatly improved.

DR. LUIGI MANFREDI contributes an elaborate paper on the food of the poor in Naples, in the course of which a vivid picture of the misery of the city is presented.

EDITORIAL COMMENTS.

First Aid to the Injured.—We wish to call attention to the exhibit of the St. John's Ambulance Association in the English Department of the Liberal Arts Building at Chicago. The good work of the Association is well recognized in Europe, and our young men should undertake similar means of saving life and limb in the United States. The object of this Association is (*a*) to disseminate instruction in rendering first aid to the injured; (*b*) to instruct women in home-nursing; (*c*) to deposit in appropriate localities materials (such as stretchers, hampers, splints, bandages, and dressings) for use in case of accident.

Our factories, railways, and cities are full of danger, and workmen, trainmen, policemen, and street-car conductors should, for the public good and their own safety, be thoroughly instructed in arresting hemorrhage and transporting injured people, and they should be supplied with means necessary to save life. The railroads of this country are said to lose $12,000,000 a year by accidents to life and limb. In the city of Pittsburg, in 1890, there were 440 deaths from violence out of 4200 deaths from all causes. In ten years there were 30,000 people injured in the streets of London, of whom 2000 died from these injuries.

The rich and the poor ride in railways and throng the streets of the cities, and alike they suffer because few know how to stop blood or transport a fainting, suffocated, or injured person.

The University of Chicago has placed in the Extension Department a lecturer on "First Aid to the Injured," and we hope that physicians will help to organize centers about every university that is wise enough, rich enough, and humane enough to turn a few moments from the Greek roots and comet-hunting and follow the example. There should be such a center wherever there is a police force, a railway center, a factory, a road-gang, a mining camp, a logging cabin, a yachting lake or stream, a skating park, or a place to swim.

Spelling-Reform.—The remarkable unanimity with which the medical press of the United States has enthusiastically welcomed the beginnings of spelling-reform, advocated by THE NEWS, is a hopeful sign. Journal after journal has taken the subject up, giving notice to readers that the suggested changes should be followed by the contributors, and would be followed by the editors. Our English colleagues, however, are silent, or very, very growly. *The Medical Press and Circular*, for example, calls it "a maniacal outburst," and abuses American spelling most roundly—without, of course, advancing a single reason against it. Formerly, the English have had the delightful impertinence to repeat *ad nauseam* that the sole reason for "American spelling" was simply our horrible ignorance of the proper way of spelling words. We believe that Josh Billings and his school have been seriously upbraided for the same dense ignorance by English critics. It is now too condemnably bad to have it even hinted that the greatest philologists and lexicographers and scientists advocate sensible orthography. To learn anything from America is, moreover, a bitter experience. How long the Britisher struggled against sleeping-cars and dining-cars on his railways is a funny and instructive history. "Brasses" for his luggage, you know, will still be detested, though he has infinite trouble and loses his unchecked baggage every trip. It is the part of wisdom, however, that the learned editor of the *Medical Press and Circular* chooses. Let him reiterate his detestation of the recommendations of the American Association for the Advancement of Science, of Professor Whitney, of all men and things American. But let him and his friends beware of attempting to give a single reason for their medievalistic orthography, for "there is nothing more contemptible than our present spelling, unless it be the reasons usually given for clinging to it."

The Cholera.—Contrary to expectation, fifteen cases of cholera developed among the passengers on the steamer Karamania, in New York harbor from Marseilles. Two deaths have occurred. All of the sick have been isolated and there are no fears of an extension of the disease.

It is cabled from Rome that official statistics as to the cholera in Italy show that during the week ending August 10 there were in Naples 258 cases of the disease and 121 deaths. On the island of Capri, twenty miles from Naples, there were during the same period fourteen cases and eight deaths. The disease was spreading to other coast towns.

The Marine Hospital Service has been notified by its representative at Naples that Italian emigration has been stopped.

From St. Petersburg it is announced that the intensity of the heat has caused a sudden increase of the cholera-epidemic in the infected Russian cities. In Moscow there were, on August 14, forty-seven fresh cases and sixteen deaths. The official returns, although understating the mortality from the cholera, show that the epidemic is much severer than that of 1892. In Nijni Novgorod the cholera has appeared in most virulent

form. In the week ending August 13 the fresh cases there numbered 260, the deaths 105. At Rostoff, twenty-two miles from the mouth of the Don, there have been 116 fresh cases and 50 deaths in the week ending August 13.

The Business of Registering and Indorsing Diplomas may be profitable in a financial sense to the medical schools who do it regardless of the ethical or educational fitness of the applicant, but it certainly is not very helpful to the medical profession. Men who educationally are utterly incompetent to pass proper examinations, and who were quacks in every true sense of the word, have been "indorsed" by institutions without a single test as to their acquirements or character, thence going forth to wage guerilla warfare on the profession as advertisers and perambulating quacks. Such authority should be taken from colleges.

The Gonococcus and Endocarditis.—It is announced that at a recent meeting of the Berlin Society for Internal Medicine, Leyden reported a case of gonorrhea, complicated by epididymitis and synovitis, in which endocarditis also developed. A fatal termination resulting, the autopsy disclosed the presence of gonococci in the polypoid vegetations situated upon the aortic and mitral valve leaflets, thus conclusively demonstrating a relation that clinical observation had already indicated.

REVIEWS.

The Johns Hopkins Hospital Reports. Report in Pathology, II. By J. Whitridge Williams, M.D. Baltimore: The John Hopkins Press, 1892.

This report is devoted to the record of a careful clinical and pathologic study of papillomatous tumors of the ovary and of tuberculosis of the female generative organs.

Papillomatous tumors of the ovaries are divided into papillomatous cysts, and superficial or surface papillomata. With regard to the cystic form, it is pointed out that older writers were misled by failing to distinguish glandular cystomata, and in consequence were led into error as to the origin of the cysts. Olshausen first pointed out the essential difference between cysts containing and those not containing papillary growths, but Dr. Williams does not agree with him that the papillomatous cysts in the majority of instances have an intraligamentous origin, and properly points out the further fact that the classification of Olshausen, Von Velits, and others, according to the presence or absence of ciliated epithelium, is a wholly artificial one. We are not, perhaps, in a position to explain why ciliated epithelium develops in pathologic structures; but the fact remains that under a variety of circumstances, as in the case of those papillomatous cysts, or in leg-abscess, as observed by Weber, or in renal cysts, as we have observed, epithelial cells may assume a ciliated character, and a classification based upon the presence or absence of cilia is likely to prove of little value. In summing up his own observations on the origin of these cystic tumors, Dr. Williams concludes that they may arise from the remains of the Wolffian body, from the epithelium of the oviducts, or from the germinal epithelium. The tendency to abdominal metastasis and to carcinomatous transformation is discussed at length, and the desirability of early operation is insisted upon, though the difficulties of diagnosis, especially at this period, are confessedly very great.

The superficial papillomata have been considered extremely rare, and Olshausen, in 1886, was able to collect only eight cases recorded in literature. That they are more frequent is, however, apparent from the occurrence of five cases in the experience of Dr. Williams within a comparatively short time. He was able, also, to find seven additional cases by carefully searching through the literature.

Still more important than this study of ovarian papillomata is that of genito-urinary tuberculosis of the female, which forms the second part of the book. A few writers have called attention to the frequency of these affections, but comparatively little attention has been paid to the subject by authors in general. The work of Dr. Williams, however, will go far to convince the skeptical, and enlist attention of those ignorant of the frequency of tuberculosis of the genital tract. According to the experience of various pathologists, uro-genital tuberculosis occurs in from 1 to 4 per cent. of all tuberculous women, and Nimias and Christoforis found one case in every twelve. Williams bases his own statements on the experience of 137 celiotomies. From this number may be excluded forty-six cases in which the ovaries, removed for various causes, were healthy or contained cysts. Among the remaining ninety-one cases decided and distinct tuberculosis was found in two cases, and microscopic examination revealed the lesions of tuberculosis in five additional cases in which the disease was "unsuspected." There were thus seven cases in ninety-one of all purulent cases, or tubes and ovaries removed for adhesions, 7.7 per cent. It will be seen that this agrees almost exactly with the experience of Nimias and Christoforis.

The order of frequency of different seats is as follows: Tubes, uterus ovaries, vagina, cervix, and vulva; and in each situation there may be miliary tubercles, or ulcerative or fibroid changes. Infection is by far most commonly carried through the blood, but the possibility of direct infection by coitus, by infected instruments, and in other ways, must be entertained, although it has never been proved. The treatment suggested in the case of disease affecting the ovaries and tubes is complete removal, even though peritoneal tuberculosis has also become established. From recent experience with celiotomy in tuberculous peritonitis few surgeons would be deterred by this complication, and probably many would be more inclined to operate because of it.

A Manual of the Practice of Medicine, prepared especially for Students. By A. A. Stevens, A.M., M.D., Instructor of Physical Diagnosis in the University of Pennsylvania, and Demonstrator of Pathology in the Woman's Medical College, Philadelphia. Illustrated. 8vo, pp. 501. Philadelphia: W. B. Saunders, 1893.

We can never take up a book like this without a sense of deep regret; first, that a demand for works of its character should really exist (and no observant person

can deny that such a demand does exist); and, second, that so much good work and ability should have been expended upon so thankless a task. Experience and observation have abundantly convinced us that students are the better for devoting more time to the larger text-books, and that it is the wiser to stimulate independent thought and reasoning. It were better for the student that he read much, even at the risk of some mental indigestion, than that he merely commit to memory the condensation that has been (however well) prepared for him. The careless and the absentee student cannot enter into consideration. There must be something inherently wrong in that system of education that countenances and encourages shallow study, rather than the acquirement of true knowledge; and we fear that as long as the ultimate aim of the student is permitted to be the passing of an examination by the faculty of a medical school, so long will there be a demand for quiz-books and "manuals" like this. We believe that the student would do better to take full notes of his lectures and study these carefully, and if the period of tuition is not sufficiently long to permit not only of reading that which is absolutely essential, but collateral literature as well, the period should be lengthened. A wonderful amount of material has here been compressed into a very small limit, but the student who absorbs it all will acquire a false sense of his own strength, at the expense of his mental development. How can it be possible within the limits of an article of fifteen hundred words to give an adequate description of so important a subject as pneumonia, considered from the point of view of etiology, pathology, symptomatology, complications, diagnosis, prognosis, and treatment; or in an article of two thousand words to do justice to the subject of enteric fever? It is scarcely worth while to call attention to the very few omissions that exist, and we must in fairness admit that the book is among the best of its kind. Let us endeavor to create a better class of medical students by providing them with better mental pabulum.

ON THE CHEMISTRY AND THERAPEUTICS OF URIC ACID GRAVEL AND GOUT: BEING THE CROONIAN LECTURES FOR 1892. With Additions. By SIR WM. ROBERTS, M.D., F.R.S. London, 1893.

SIR WILLIAM ROBERTS' long study of the problems of metabolism and his wide clinical experience give special value to this book. While avoiding the extreme view of some who find in uric acid a *fons et origo mali* perennial and universal, he appreciates the importance of the subject; but points out clearly the difference between gravel and gout so often ignored. The normal urates of the blood he proves to be quadri-urates, the morbid phenomena of gravel and gout arising from their conversion into uric acid (gravel) or bi-urates (gout). Urates practically form the entire renal excretion of serpents and birds, but their production in mammals is a vestigial phenomenon, indicating that mammalian evolution is not complete. Fothergill regarded it rather as a reversion. The therapeutic point is to keep the urine alkaline in subjects disposed to gravel, the alkalies chosen being preferably vegetable salts of potassium; and the most important period to safeguard being the night, when the alkaline tide of digestion cannot be depended upon for the purpose. In gouty cases, the most important measures are diet and regimen, proteids being restricted, and bread, rice, garden vegetables, salads, and fruits given freely. While chemistry cannot give any reason therefor, alcoholic and malt liquors must, on clinical grounds, be forbidden. The use of common table-salt is restricted. Alkalies have a doubtful place in the treatment of gout. If lithium carbonate or piperazin has any value, it is not due to solvent power over the material of gouty concretions. Mineral waters containing sodium salts are highly objectionable. The resort to non-sodic thermal springs is of greater benefit than using the waters at home, because "other things are *not* equal."

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. V, for the year 1892. Philadelphia: W. J. Dornan, 1893.

THIS volume contains a variety of articles, most of which have already appeared in print in the medical periodicals of the past year. The article by Joseph Price, on the "Present Status of Obstetrics," gives a thorough *rêsumê* of recent opinion in this branch of practice. The reference to the treatment of eclampsia by large doses of morphin, as noted by Löhlein; the author's views on the ante-partum douche, and the tables compiled for comparison from the records of European and American maternities, are worthy of careful consideration.

The article on "Tumors of the Abdominal Walls," by Edward J. Lee, of Newark, N. J., is a most comprehensive, scientific, and original article, and seems to have called forth the most fruitful of the discussions that have been printed.

The article on "Posture in Obstetrics and Gynecology," by William Warren Potter, contains an interesting description of the various postures as accessories in diagnosis and treatment, with a complete set of photographic illustrations. The history of the discovery of the genu-pectoral position and its advantages in the application of pessaries are particularly to be noted.

A short article by J. Henry Carstens, of Detroit, on the "Technique of Vaginal Hysterectomy," is important on account of the discussion, which brings up the subject of the different patterns in clamps for the broad ligament, but in which the use of the ligature in preference to the clamp is altogether ignored, showing the general acceptance of the use of clamps as the only means of fixing the ligament.

FONCTIONNEMENT DE LA MAISON D'ACCOUCHEMENTS BAUDELOCQUE. CLINIQUE DE LA FACULTÉ. DIRIGÉE PAR LE PROFESSEUR ADOLPHE PINARD. Année 1892. DR. G. LEPAGE, Ancien Chef du Laboratoire de la Clinique, Chef de Clinique. Paris: G. Steinheil, 1893.

THIS report details the work of the Clinique Baudelocque for the year 1892. Although many of the cases were used for purposes of instruction, and a large number of students participated in the demonstrations, not a single accident resulted from infection as a result of defective asepsis. The students were also afforded an opportunity of vaccinating the newborn children and observing the course of the resulting vaccinia. During

the year, 1834 cases were delivered at the clinique. Among this number there were eight deaths, including three from puerperal septicemia. Forty-two additional cases entered the gynecologic service. The forceps was applied in 76 cases. Basiotripsy was performed in 9 cases; craniotomy in but 1. Cervical embryotomy was performed in 4 cases; spinal embryotomy in 1. Premature labor was induced in 3 primiparæ having normal pelves and in 8 women (4 primiparæ and 4 multiparæ) with deformed pelves. Symphysiotomy was performed in 13 cases; all of the mothers were saved and 10 of the children. Ischio-pubiotomy was performed in 1 case. Version was performed in 10 cases. There was but 1 case of ectopic pregnancy, which was brought to a successful issue by celiotomy. In 34 cases the placenta was removed by means of the hand. Ten primiparæ and 10 multiparæ were delivered of twins. Seventeen of the children presented malformations, or deformities, or monstrosities. There were 21 cases of purulent ophthalmia.

History of the Life of D. Hayes Agnew, M.D., LL.D. By J. Howe Adams, M.D. With fourteen full-page portraits and other illustrations. 8vo, pp. 376. Philadelphia: The F. A. Davis Co., 1893.

Dr. Adams writes in an entertaining style, and his text is, on the whole, interesting. The skill and energy of Dr. Agnew and the lovable character that won him so many friends are well set forth. Among minor errors of incidental gossip is the statement that the Philadelphia Polyclinic grew out of the Philadelphia School of Anatomy or took its first faculty therefrom. Dr. Roberts and Dr. Leffmann, of the faculty of the School of Anatomy, were members of the first faculty of the Polyclinic. Others who had been connected with that school have, from time to time, likewise become connected with the Polyclinic and, under Dr. Steinbach, the operative-surgery classes of the Polyclinic have been instructed at the rooms of the Philadelphia School of Anatomy. There is thus a connection between the two institutions, but not the one Dr. Adams imagines. This correction is made as a matter of local medical history.

Transactions of the Fourteenth Annual Meeting of the American Laryngological Association, held in the City of Boston, June 20, 21, and 22, 1892. New York: D. Appleton & Co., 1893.

This volume of *The Transactions of the American Laryngological Association* is of the same high standard as its predecessors. The articles show care in preparation. Some of the cases reported are unique, and almost all are interesting. The views advanced are largely based on actual clinical work, and this always carries weight. The volume does much credit to the Association.

Appendicitis and Perityphlitis. By Charles Talamon. Detroit: G. S. Davis.

In this new addition to the Physician's Leisure Library, we find a most able and brilliant discussion of a malady that at present claims a large share of professional attention.

We are acquainted with no treatise on this subject that so clearly describes the lesions and their causes, that sets forth the diagnosis and symptoms in so lucid a manner, or that deals with opposing views with a fairness so temperate and judicial.

It is a book worthy of critical review and one that will prove of value to every practitioner of medicine and surgery. It is especially gratifying to observe the credit that this distinguished Frenchman accords to American observers.

Handbook of Massage. By Emil Kleen, M.D., Ph.D. Authorized Translation from the Swedish by Edward Mussey Hartwell, M.D., Ph.D. 8vo, pp. 316. Philadelphia: P. Blakiston, Son & Co., 1892.

The introduction to the American edition of Kleen's work, written by Dr. Weir Mitchell, characterizes it as a "calmly scientific statement of the uses and effects of massage." We cordially indorse this high commendation. In addition, its fulness, the clearness of its descriptions, and the evident sincere truthfulness of the author give the book an almost inestimable value. Wearied of extravaganza on the one hand, and on the other of exasperatingly incomplete manuals, the physician who has almost despaired of finding a comprehensive but not tiresome presentation of the important subject of mechanical therapy will find in this book the desideratum so long sought. Anything more must come from personal experience. The book is well indexed.

The Modern Antipyretics: Their Action in Health and Disease. By Isaac Ott, M.D. Second edition, revised and enlarged. 8vo, pp. 125. Easton, Pa.: E. D. Vogel, 1892.

The second edition of Dr. Ott's useful little manual is enlarged by a more elaborate study of heat-regulation, incorporating the author's researches published in various journals, and the practical deductions are set forth more at length. Some new agents are considered. We can only repeat our former commendation of the author's spirit, methods, and work.

CORRESPONDENCE.

PRECOCIOUS PREGNANCY AND OTHER UNUSUAL CONDITIONS.

To the Editor of The Medical News,

Sir: Noticing the report of a case of precocious pregnancy in a recent number of The News, I concluded that the following would be of equal interest, and even more so, as the dates are of an earlier age. When practising in Liverpool I attended a girl who was delivered *seven days* after her *thirteenth* birthday. I have only her mother's assertion of the fact, but judging from general appearance I had every reason to believe her correct. The growth on the mons Veneris was exceedingly slight, scattered and of a light color. The labor was very tedious, and though the girl might have been delivered without instrumental aid, still I thought it advisable to assist her and thus prevent after-exhaustion and possible flooding

The following, though not relating to pregnancy, may also be of interest:

A very tall, well-developed girl was brought by her mother to my surgery. I concluded that her age could not be under nineteen, and was astonished to learn that she was but *eleven*, and that menstruation had commenced between seven and eight years of age. The girl's brother, whom I subsequently saw, was in height about five feet eleven inches, well developed and muscular and with no small amount of whiskers. His age was *thirteen*. He had been working in a foundry or iron-works for about twelve months.

I have seen a short, under-sized girl, or in appearance a woman, with breasts full, voice strong and not childish, and whose age was nine, and whose mother stated that menstruation had been established, and regularly, for about eighteen months.

The last and most extraordinary case was that of a lady, aged eighty, with whom menstruation commenced (if I remember correctly) between sixteen and seventeen. She had known no menopause, and, with the exception of the periods of gestation and lactation, had menstruated regularly to the time of her death. All her daughters, five in number, had ceased menstruating years previously.

I gave it as my opinion that on its cessation death would result, which proved correct toward the approach of her eighty-second year. The old lady was a widow. A very interesting point in her case would be this: Had she been married in her advanced age, could pregnancy have resulted?

Your obedient servant,

LOGAN RUSSELL, I.P., F.R.C.S.,
Surgeon-Captain, Garrison Artillery Militia.

GOVERNMENT PARK, ST. CATHERINE, JAMAICA.

SPONTANEOUS RUPTURE OF THE SYMPHYSIS PUBIS DURING LABOR.

To the Editor of THE MEDICAL NEWS,

SIR: THE NEWS, July 15th (p. 73), contains a report of the spontaneous rupture of the symphysis pubis during the application of forceps. I have seen the same occurrence without the use of the forceps. Last winter I was called to see a robust woman two or three weeks after her confinement, with a swelling in the pubic region. The forceps had not been used, although she stated that she had been torn apart. Evidently the attending physician had his fingers in the vagina when the rupture occurred. I incised the abscess, which I found, and introduced my finger between the separated ends of the symphysis. The cartilage seemed destroyed. A few days of drainage and a band around the hips sufficed to effect a cure. About six weeks later the woman was up and around. Whence came the infection? The woman's pelvis was somewhat narrow, as well as I remember; in two previous confinements in which I attended her, the fetuses were expelled only after the most formidable pains, and in one I applied the forceps.

Very respectfully,

M. HARTWIG.

BUFFALO, N. Y.

Veit has retired from the Chair of Gynecology at Bonn. Fritsch, of Breslau, is in contemplation as his successor.

SOCIETY PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Sixty-first Annual Meeting, held at Newcastle-upon-Tyne, August 1, 2, 3, and 4, 1893.

(Continued from page 195.)

FOURTH DAY—AUGUST 4TH.

DR. C. J. CULLINGWORTH delivered the Address in Obstetrics and Gynecology, which was entitled, "On Pelvic Peritonitis in the Female, and the Pathologic Importance of the Fallopian Tubes in Connection Therewith."

He pointed out some of the advances that have been recently made in our knowledge of pelvic inflammations, and more especially pelvic peritonitis. The subject includes the most common and, from their far-reaching effects upon the sufferer's health and usefulness, probably the most important of all the diseases of women. It almost equally concerns the obstetrician and the gynecologist, and has now been delivered, or nearly so, from the bondage of theory and tradition and the authority of great names, and may at length be studied in the light of well-ascertained facts.

Allusion was made to the work and writings of M. Bernutz, one of the greatest gynecologists of the century. At the time when Bernutz published his clinical memoirs it was the current belief that the hard swellings felt above the vaginal roof on one or both sides of the uterus in cases of pelvic inflammation were invariably due to inflammatory exudation in the connective tissue at the base of the broad ligament, or between its layers. Various names were given to these exudations, but whether they were described as pelvic cellulitis, or parametritis, or peri-uterine phlegmon, there was practically no difference of opinion as to their seat. For some time Bernutz himself participated in the common belief. The fatal termination, however, of two cases under his own care served effectually to change his views, and enabled him "to prove incontestably that the peri-uterine tumor, which during life presented all the symptoms of the so-called peri-uterine phlegmon, was not situate in the cellular tissue at all. In the necropsies in question the tumor, which even after death presented all of the usual signs, was seen to be formed by the pelvic viscera matted together by peritoneal adhesion." One of the cases was that of a young woman of eighteen, who had led an irregular life for twelve months, and who on the eighth day of an attack of gonorrhea was suddenly seized with severe pain of progressive intensity in the lower part of the body. In addition to the usual signs of acute gonorrhea there was discovered on examination a resisting body above the vaginal roof, extending all round the cervix except on its right side. Pressure on the tumor caused great pain. Rest, and the application of leeches to the left iliac region, gave some relief, but the swelling remained the same, and a few days later the pains returned. After some weeks the patient had an attack of jaundice, and then pleurisy with effusion—first serous, and, after the first tapping, purulent. She died after three months. On *post-mortem* examination the bladder, uterus, broad ligaments, and sigmoid flexure were all found matted together by old adhesions.

There was no cavity on the left side of the pelvis, the broad ligament being united to both bladder and rectum. On separating these adhesions an intra-peritoneal abscess was opened. The uterus was bound posteriorly to the rectum. The Fallopian tubes were highly congested. The right one contained two collections of pus, one at the fimbriated extremity, which was dilated and firmly adherent to the ovary. The left tube contained no pus, but was impermeable. The ovaries were both healthy. The cellular tissue of the broad ligaments and uterus were perfectly healthy. The supposed phlegmon did not exist.

In 1862 Bernutz, in conjunction with his friend, M. Goupil, published in a collected form a marvellous series of clinical memoirs, which constitute by far the most important contribution ever made to the literature of gynecology.

The conclusions at which Bernutz arrived as a result of his researches have been summarized by himself as follows: (1) That inflammation of the pelvic peritoneum is a disease very commonly met with; (2) that the tumor found after death in cases of pelvic peritonitis is formed by various intra-pelvic viscera being matted together as a consequence of the inflammation; and (3) that inflammation of the pelvic serous membrane is always symptomatic, and that it is generally symptomatic of inflammation of the ovaries or Fallopian tubes.

It might be thought that views so clearly expressed and supported by such incontrovertible evidence must needs have met at once with general acceptance, and become part of the common stock of professional knowledge; but they did nothing of the kind. For twenty years the old views continued to be generally taught, and even yet they form the basis of much of the current teaching and practice in regard to pelvic inflammations.

The new views might possibly have attracted more attention had it been made to appear that they had any important bearing upon treatment. Many years, however, were destined to elapse before the discoveries of Bernutz found a practical application, and even then it was not, in the first instance, as a direct result of those discoveries, but as an outcome of that surgical enterprise which, just as it had opened new avenues of knowledge and new possibilities of relief and cure by operative treatment in the case of the kidney, is doing the same for other organs of the body, and notably for those which are chiefly concerned in the production of pelvic peritonitis.

In the year 1872 the operation for the artificial induction of the menopause, by the removal of the healthy Fallopian tubes and ovaries, was carried out by three operators of different nationalities at dates so closely following one another and yet at places so remote that it was practically impossible for there to have been any sort of concerted action. On July 27th, Hegar performed the operation at Freiburg in a case of ovarian pain and menorrhagia. Five days later Lawson Tait operated at Birmingham on a case of uterine myoma with excessive hemorrhage; and within three weeks of Hegar's operation, a highly respected American gynecologist, Dr. Robert Battey, of Rome, Georgia, performed a similar operation on a patient with hystero-epilepsy and amenorrhea. At the instance of Dr. Marion Sims, the operation has been named after his compatriot, Dr. Battey, who appears to have conceived the idea of the operation seven years before he had an opportunity of carrying it out, and who certainly can claim the credit of having been the first to publish his case and to bring the whole subject before his professional brethren for discussion.

In the course of two or three years the number both of operations and operators began rapidly to multiply, so that at the International Medical Congress held in London in 1881 Battey showed a table of 193 complete and 25 partial operations. The general death-rate of these was 18 per cent., but individual operators were beginning to show a greatly diminished mortality. Tait, for example, reported 26 consecutive cases with but a single death, and Savage reported an equal number with no death at all. With such results as these it was to be expected that the scope of the operation would soon be widened, and instead of being limited to the removal of the normal organs, would be extended to cases in which the uterine appendages were themselves the seat of the disease. And this is precisely what took place. In the years 1879 and 1880 Hegar, in Germany, and Lawson Tait, in England, operated on several patients for the removal of inflamed ovaries and tubes, and then it was that the accuracy of the observations of Bernutz came to be fully recognized, and his apparently barren discoveries to bear their legitimate fruit. The knowledge at which he had arrived by *post-mortem* investigation was now arrived at in a different, but at least equally conclusive, way, by actual inspection and touch during life.

In the vast majority of cases in which the mobility of the uterus is more or less impaired, and in which hard, irregular, fixed swellings can be felt above one or above both lateral fornices of the vagina, and often extending into Douglas's pouch, no evidence of cellulitis is to be found, and when it does exist it is clearly secondary to the salpingitis and peritonitis which constitute the principal lesions present. Inflammatory exudation in the cellular tissue of the broad ligament or elsewhere, sufficient to form a distinct tumor recognizable as such by bimanual examination, is exceptional. In some cases of chronic suppurative inflammation of the uterine appendages, the broad ligaments are the seat of a certain amount of thickening from inflammatory exudation, but this obtains only in the neighborhood of the suppurative disease, and the thickening seldom exceeds one-eighth of an inch, and even in extreme cases rarely exceeds half an inch. The usual state of things disclosed on opening the abdomen in these cases is as follows: The contents of the pelvis are generally concealed from view by the great omentum, which has been drawn down so as to cover them in anteriorly, and has contracted adhesions to the peritoneum as it becomes reflected upon the anterior abdominal wall, as well as upon the uterus and other pelvic viscera. Along with this screen, as it were, of omentum it is not unusual to find coils of adherent small intestine. On separating and drawing aside this screen, one side, or it may be the whole, of the posterior part of the true pelvis is seen to be occupied by what appears to be an indistinguishable mass of matted viscera. The uterus itself is sometimes implicated in the mass, but in other cases its upper part at least is free. Tracing the Fallopian tube outward from the uterine

cornu on the side of the disease, it is often found to be normal in size for the first half-inch or so, and then to become involved in the adherent mass. This mass, on being separated and brought into view, is invariably found to consist of the uterine appendages more or less altered by inflammation. There is always salpingitis, and the inflamed and thickened tube usually enfolds the ovary. In a large number of cases the ovary itself is normal, except that it is universally adherent. Whenever the lateral swelling is so large as to push the uterus to the opposite side, this condition of the ovary may be suspected. In many cases the cysts in the ovary are found to be in a state of suppuration, their contents having presumably become infected from the inflamed and suppurating Fallopian tubes. Primary ovaritis, either acute or chronic, is (apart from tuberculous disease) extremely rare.

With regard to the tubes, the first point to be noted is that the evidences of peritoneal inflammation are always most marked in the neighborhood of the fimbriated end, showing clearly that the pelvic peritonitis has originated by direct extension from the mouth of the inflamed tube or by the escape of morbid secretions therefrom. When the secretion from the inflamed tube is chiefly mucous in character, with only a slight intermixture of pus-corpuscles, the intensity of the inflammation around the abdominal ostium is shown by the extreme density of the adhesions at that spot, and nothing more. When the secretion, on the other hand, is wholly purulent, either an intra-peritoneal abscess is found, encysted among adhesions, and fed by the purulent discharge issuing from the open mouth of the suppurating tube, or the pus, accumulating in the occluded tube, distends it, sometimes uniformly but more often irregularly, forming a series of loculi or pouches full of pus here and there along the tube, in either case constituting the condition known as pyosalpinx.

The changes in the walls of the tube are as follows: In acute cases the mucuous membrane, including the projecting longitudinal folds, is found highly congested and swollen and covered with purulent or muco-purulent secretion; in chronic cases the condition varies according to whether the inflammatory secretions are pent up within the tube or have made their escape from the open fimbriated end. In the former case the mucous membrane is either distinctly ulcerated or covered with granulation-tissue; in the latter, having got rid of its secretions, it is often found to have resumed more or less completely its normal appearance, except in the neighborhood of the adherent abdominal ostium, where it is frequently intensely congested and edematous. The most striking change in chronically inflamed tubes is due to the extension of the inflammation to the middle or muscular coat, which becomes greatly thickened and indurated from inflammatory exudation amongst the connective-tissue elements of the muscular layer, causing irregular separation of the muscle fibers and producing a general thickening of the tube-wall, which often measures from one-eighth to half an inch in thickness. The enlargement of the tube is not only manifested in an increase in its width and circumference, but frequently, also, in an increase in its length; and as this increase in length takes place within a confined space, it frequently results in the tube becoming doubled and folded upon itself, forming an intricate series of convolutions. Sometimes the convolutions take a sharp turn, forming knuckles on the external aspect, and shutting off by the suddenness of the bend one portion of the canal from the other.

In advanced cases further changes may take place; the pus-containing tube becoming adherent to a cystic ovary, its wall may ulcerate and perforation occur, permitting the escape of the purulent contents of the tube into the interior of the cyst and the formation of tubo-ovarian abscess. The result of such an accident is a sudden and most violent attack of pelvic peritonitis, placing the life of the patient in eminent peril. It must not, however, be supposed, whenever an inflamed and purulent tube is found suddenly to lead into a large abscess-cavity, giving an appearance that has been happily compared to that of a retort, that the condition is necessarily one of tubo-ovarian abscess.

When the salpingitis is unilateral, it is not at all unusual to find that the peritonitis spreading from its place of origin, the fimbriated end of the inflamed tube, has passed over to the other side of the pelvis, involving the healthy uterine appendages of that side in a mass of adhesions. Under such circumstances closure of the abdominal ostium of the healthy tube is likely to occur, and to be followed by the development of a hydrosalpinx, which, though then simply an incident in the course of an attack of pelvic peritonitis, may in its turn itself become a source of suffering and ill-health. Hematosalpinx, as a complication of salpingitis, is much more rare. In the great majority of cases hemorrhages within the tube and hematoceles of tubal origin are the consequence of tubal gestation, but now and then they occur as incidents in the course of the inflammatory processes just described, and quite independently of gestation.

The Fallopian tube is exposed to constant risk of infection, owing to the direct continuity of its lining membrane with that of the uterus and vagina, so that it is almost a miracle if it escapes in any case of acute infective endometritis, whether septic or gonorrheal. But there is the widest possible difference between the danger of an acute endometritis and that of an acute endosalpingitis. In the former the patency of the cervical canal provides a natural outlet for the morbid secretions; in the latter there is no such natural outlet. The uterine end of the Fallopian tube has, even under normal circumstances, a lumen only just large enough to admit a fine bristle. It will, therefore, be readily understood that it only requires a very slight amount of swelling of the mucous membrane, such as is probably inseparable from the mildest inflammatory attack, to block up that end completely. Hence, as an outlet for inflammatory secretions, the uterine orifice may practically be regarded as non-existent. The position of matters, therefore, is that either there is no outlet at all for the morbid secretions, owing to the closure of one orifice by the swollen mucous membrane and the closure of the other by adhesions, or the only outlet is through the abdominal ostium into the peritoneal cavity. It is this fact of the absence of a safe outlet for inflammatory products that makes an attack of suppurative salpingitis so much more serious a matter than an equally severe attack of suppurative endometritis, and that invests the inflammatory affections of the Fallopian tube generally with such an exceptional and grave importance.

It is not only in pelvic pathology, however, that additions to our knowledge have recently been made; our powers of diagnosis have been enlarged.

In order to make a satisfactory bimanual examination in a suspected case of pelvic inflammation it is essential that the patient be in the dorsal position, with the knees flexed and separated, the head supported on a single pillow, and the shoulders not raised, as is generally recommended, but lying flat on the couch or bed. To avoid strain (and no examination can ever be satisfactory in which the posture of the examiner involves the least strain), the examiner should stand or sit directly in front of the patient.

In considering the value of operations undertaken for the removal of the uterine appendages as a mode of treatment, it is desirable, in the first instance, to make a clear distinction between the operation for the removal of the uterine appendages when there is no obvious lesion of either tube or ovary, and the same operation when those parts are the seat of manifest disease. The scope of Battey's operation—that is, the operation for the artificial induction of the menopause, never very wide, has become narrower and narrower as experience has increased, and is now practically restricted to the treatment of certain cases of uterine myoma. As a means of relieving neurotic conditions, it is so terribly open to abuse, it raises so many difficult questions that are better left undisturbed, and it has proved so uncertain and disappointing in its results, even when legitimately applied, that it is now thoroughly and properly discredited. At the same time it must never be forgotten that it is to the men who first conceived and carried out Battey's operation that we owe not only a method of dealing with uterine myomata that has saved many a life, but also the further development of pelvic surgery, which is one of the greatest triumphs of modern gynecology, as illustrated by the operation for the removal of the uterine appendages when they are the seat of serious disease.

It was finally pointed out that not every case of inflamed Fallopian tubes should be operated upon. On the contrary, most of them recover without operation. But there is a large residuum of cases—most of them chronic, some few acute—in which nothing but an operation can save life. And there is a still larger number of cases in which a timely operation rescues the patient from years of misery, incapacity, and chronic invalidism. Every case has to be considered individually; no rules can be laid down which shall be of universal applicability. The woman who has her bread to earn, or who is the busy wife of a working-man, cannot afford the luxury of an illness extending over several years, and an operation would be justifiable in her case when it would not be in the case of her more well-to-do sister. The operation is, in short, not a universal panacea, but an invaluable addition to our resources, which, when it is adopted in suitable cases, with a due sense of responsibility, and after full explanation to the patient and her friends, both of the immediate risk and the ultimate physiologic results, is capable of achieving triumphs as remarkable as any operation in surgery.

Cholera in Berlin.—It is announced that on August 15th, three Polish laborers died of cholera in the eastern quarter of the city of Berlin.

NEWS ITEMS.

Preliminary Program of the Section on Ophthalmology of the Pan-American Medical Congress, to be held in Washington, D. C., September 5, 6, 7, and 8, 1893.

"Some Experiences in Hemorrhagic Glaucoma: Its Progress and Treatment." By Dr. S. D. Risley, Philadelphia.

"Homeochronous Hereditary Optic-nerve Atrophy Extending Through Six Generations." By Dr. George M. Gould, Philadelphia.

"Suppurative Processes of the Vitreous." By Dr. J. F. Fulton, St. Paul.

"A Clinical Study of the Visual Field in Hemianopia." By Dr. Charles A. Oliver, Philadelphia.

"Glaucoma from Traumatic Causes." By Dr. E. Lopez, Havana.

"Spontaneous Replacement of a Case of Detached Retina." By Dr. J. Wallace, Philadelphia.

"Etiology and Early Management of Glaucoma." By Dr. G. E. Dean, Scranton, Pa.

"Acute Monocular Neuro-retinitis, with Cases." By Dr. B. L. Millikin, Cleveland.

"Further Studies of the Cycloplegic Value of Homatropin and Cocain-Discs as a Substitute for Atropin and Hyoscyamin." By Dr. Casey A. Wood, Chicago.

"The Relation of Skiascopy to Other Tests for the Determination of Ocular Refraction." By Dr. H. V. Würdemann, Milwaukee.

"The Necessity for Complete Suspension of Accommodation by Mydriatics in the Adjustment of Glasses." By Dr. G. C. Savage, Nashville, Tenn.

"A Contribution to Refractive Errors." By Dr. J. C. Morgan, Philadelphia.

"The Hygienic and Scientific Value of Examinations of the Eyes in Schools." By Dr. B. A. Randall, Phila.

"Refraction Anomalies of Artists." By Dr. J. C. Morgan, Philadelphia.

"Astigmatism following Cataract-Extractions and Other Sections of the Cornea." By Dr. Edward Jackson, Philadelphia.

"A Few Thoughts about Ophthalmometry, as to What the Javal Instrument Will Do and What it Will Not." By Dr. Louis J. Lautenbach, Philadelphia.

"Skiascopy in Ophthalmometry." By Dr. Pedro Lagleyze, Buenos Ayres, Brazil.

"Cataract-extraction with Iris-retractor, with a Report of Twenty-nine Cases." By Dr. Francis Valk, of New York.

"A Clinical Study of Heterophoria." By Dr. Hiram Woods, Baltimore.

"An Analysis of Fifty Cases of Internal Squint." By Dr. H. F. Hansell, Philadelphia.

"Some Forms of Anomalies in Eye-Muscles." By Dr. E. J. Gardner, Chicago.

"Affections of the Nose as a Cause of the Want of Concordance of the Action of the Eye-Muscles." By Dr. W. Cheatham, Louisville.

"Further Experiences in Graduated Tenotomy." By Dr. Charles H. Thomas, Philadelphia.

"Graduated and Complete Tenotomy for the Relief of Heterophoria, with a New Objective Test for Use During Operation." Dy Dr. S. Lewis Ziegler, Philadelphia.

"Treatment of Six Cases of Irido-cyclitis Complicated with Cataract." By Dr. Robert L. Randolph, Baltimore.

"Electric Therapeutics in Ophthalmic Practice." By Dr. L. A. W. Alleman, Brooklyn.

"Gouty and Rheumatic Affections of the Eye." By Dr. W. Oliver Moore, New York.

"The Local Application of Bichlorid of Mercury in the Deep Inflammations of the Eye." By Dr. W. F. Mittendorf, New York.

"Skin-grafting for Malignancy of the Eyelids." By Dr. F. B. Tiffany, Kansas City.

"The Nomenclature of Blepharitis." By Dr. Dudley S. Reynolds, Louisville.

"Orbital Tumors." By Dr. W. B. Johnson, Paterson, N. J.

"Exophthalmos Traumaticus." By Dr. L. F. Love, Philadelphia.

"Further Observations on the Eye of the Negro," By Dr. C. W. Kollock, Charleston, S. C.

"Hemorrhagic or Croupous Iritis." By Dr. A. Alt, St. Louis.

"A Case of Cysticercus in the Vitreous." By Dr. W. Cheatham, Louisville, Ky.

The American Electro-Therapeutic Association will hold its third annual meeting in Chicago, September 12th, 13th, and 14th. The following is the preliminary program:

Discussions: "What are the Possibilities of Electricity in the Treatment of Fibroid Growths?" "The Influence of Frequency of Interruptions and Character of Induced Current Waves upon Physiologic Effect."

Papers: "The Nutritional Effects of Static Electricity," by Prof. W. J. Morton, M.D., of New York. "Electro-Medical Eccentricities," by Newman Lawrence, M.I. E.E., of London, England. "The Graphic Study of Electric Currents in Relation to Therapeutics," by J. H. Kellogg, M.D., Battle Creek, Mich. "The Action of the Continuous Current within the Living Tissues, as Distinguished from the Local Polar Action," by Prof. W. J. Herdman, M.D., of Ann Arbor, Mich. "The Therapeutic Application and the Theory of Alternating Currents," by Dr. Georges Gautier, of Paris, France. "The Treatment of Fibroid Tumors with Electricity," by Dr. Georges Gautier, of Paris, France. "Induction-Coils," by Mr. A. E. Kennelly, of the Edison Laboratory. "Electrolysis in Tumors of the Bladder," by Robt. Newman, M.D., of New York. "The Present Position of Electricity in the Treatment of Ectopic Gestation," by A. Brothers, M.D., of New York. "Electro-Therapeusis in Salpingitis," by W. B. Sprague, M.D., of Detroit, Mich. "Report of a Case of Ascites Cured by Galvanism," by Holford Walker, M.D., of Toronto, Canada. "The Primary Action of the Galvanic Current on the Blood. It increases the amount of Ozone it contains as shown by Chemical Tests of the Blood in the Arteries," by J. Mount Bleyer, M.D., and M. M. Weil, M.D., of New York. "The Conservation of Energy as a Successful Factor in Electro-therapy," by Horatio R. Bigelow, M.D., of Philadelphia. "Synovitis treated by Cataphoresis," by F. H. Wallace, M.D., of Boston, Mass. "The Use of Static Electricity in the Treatment of Incipient Insanity," by W. F. Robinson, M.D., of Albany, N. Y. "Further Study of Electric Anesthesia and Frequency of Induction Vibration," by W. F. Hutchinson, M.D., of Providence, R. I. "The Absorption of Fibroid Tumors by Mild Electric Currents," by R. J. Nunn, M.D., of Savannah, Ga. "Some Observations on the Fine Wire Coil or Current or Tension," by H. E. Hayd, M.D., of Buffalo, N. Y. "The Treatment of Subinvolution by Electricity," by C. G. Cannaday, M.D., of Roanoke, Va. "Successful Treatment by Electrolysis of Four Additional Cases of Esophageal Stricture, with Exhibition of Two Cases," by D. S. Campbell, M.D., of Detroit, Mich. "The Treatment of Dysmenorrhea by the Galvanic Current," by A. Lapthorn Smith, M.D., of Montreal, Canada. "Notes upon Some Uses of Galvanism in Surgery," by W. B. D. Beaver, M.D., of Reading, Pa.

The Pan-American Medical Congress.—Provisional program of the Section on Pedagogy:

The President's address, "Medical Education in the United States," by D. J. Collins Warren, of Boston. "The Importance of Physiologic Chemistry as a part of Medical Education," by Dr. R. H. Chittenden, of New Haven. "The Importance of Bacteriologic Study to Medical Students, and the Scope of Instruction," by Dr. Harold C. Ernst, of Boston. "A Demonstration of the Cesarean Section and the Porro Operation," by Dr. Gustav Zinke, of Cincinnati. "A Contribution to a Study of Methods of Medical Education in the United States," by Dr. Bayard Holmes, of Chicago. "Methods of Teaching Clinical Medicine," by Dr. F. C. Shattuck, of Boston. "A Demonstration, with Colored Crayon, of Methods of Instruction in Anatomy and Surgery," by Dr. M. H. Richardson, M.D., of Boston. "The Methods of Medical Education," by Dr. Victor Vaughan, of Ann Arbor, Michigan. "The Aims and Methods of Medical Education," by Dr. W. C. Dabney, of the University of Virginia. "The Relation of Biology to Medical Education," by Dr. W. T. Sedgwick, of Boston. "Demonstration of the Physiologic Action of the Heart," by Dr. J. P. Sawyer, of Cleveland.

The American Dermatological Association will hold its seventeenth annual meeting at Milwaukee, Wis., September 5, 6, and 7, 1893. The following papers are announced: "Antiseptic Treatment of Skin-diseases," by Dr. C. W. Cutler; "The Principles of Antisepsis in the Treatment of Eczema," by Dr. H. G. Klotz; "Cosmetics," by Dr. R. B. Morison; "A Case of Tuberculosis of the Skin Simulating Lupus Erythematosus," by Dr. W. A. Hardaway; "A Case of Rhinoscleroma," by Dr. G. T. Jackson; "Atrophia Maculosa Cutis, with a Case," by Dr. W. T. Corlett; "A Contribution to the Pathology of Acne Varioliformis," by Dr. J. A. Fordyce; "Angiokeratoma," by Dr. J. Zeisler; subject to be announced, by Dr. M. B. Hartzell.

Dr. H. R. Crocker, of London, will read a paper on "Lupus Erythematosus as an Imitator."

General discussion on "Pityriasis Rosea": (*a*) Its etiology; (*b*) its relation to ringworm, seborrhea, eczema, etc.; (*c*) its treatment. "Dermatitis Exfoliativa": (*a*) Its clinical forms; (*b*) its etiology; (*c*) its treatment. "What Do We Understand by Pemphigus?"

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ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.[1]

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THE treatment of Graves' disease constitutes one of the unsatisfactory chapters in therapeutics. One does not have to look far into the literature of the subject to find conclusions widely different. A. praises the virtues of galvanism; B. vaunts the efficacy of digitalis; while C. may be found extolling the properties of belladonna, aconite, veratrum viride, or duboisin. It is a fact that no one claims to cure very many cases. In studying the treatment, one soon concludes that, in the majority of cases, staying the progress of the disease for a variable length of time is all that is to be expected. This is scarcely to be wondered at, in consideration of the fact that we are in the dark as to the nature of the disease. We are not only ignorant of its seat, but we do not even know whether it is organic or functional. What we do know is, principally, that a certain symptom-complex occurs with sufficient frequency to characterize it as a definite disease, and careful clinical study in late years has made our task even more difficult in having recognized the occurrence of incompletely developed forms, the interpretation of which is by no means always easy.

The triad of symptoms originally described as characteristic of Graves' disease, tachycardia with subjective sensation of palpitation, a vascular swelling of the thyroid gland, and exophthalmos, has been added to by the observation of various symptoms on the part of the eye and the general nervous system. Under the latter head may be mentioned tremor, hyperidrosis, subjective sensations of heat, vertigo, nausea, vomiting, and insomnia; a marked diminution of the resistance of the skin to the electric current is also almost constantly found. In the eye, Graefe's symptom, a failure of the upper lid to follow the downward movements of the globe, holds the most prominent position as a diagnostic point, excepting, of course, the exophthalmos; an almost entire absence of the involuntary wink was also described by Stellwag, and this symptom bears his name. It was the result of Marie's[2] exhaustive study of the subject, however, to show that cases occur in which any of these symptoms may be absent; that the combination of only one of the cardinal symptoms with some of the other nervous manifestations may be all that we have with which to make a diagnosis. The disease is always harassing to the patient, if it be at all strongly marked, and, if it progress, may lead to the development of a decided cachexia and to a lethal ending.

This is neither the time nor place for an exhaustive discussion of the pathology and causation of exophthalmic goiter, but a short consideration of the principal theories may be of interest, and will certainly aid us in judging the results of the treatment. Following Gauthier's classification, the theories proposed for the explanation of exophthalmic goiter may be placed in three divisions:

1. *The cardio-vascular theories*, which locate the seat of the disease in the heart itself, the vessels, and the blood.

2. *The mechanical theories*, which connect the symptoms with compression of vessels or nerves in the neck by the primarily hypertrophied thyroid.

3. *The nervous theories*, which attribute the disease to disturbances in the pneumogastric, in the sympathetic itself, or in the central nervous system proper.

The cardio-vascular theories we can put aside without any further discussion, as they have, at the present day, few or no supporters. Not so, however, the mechanical theories. These concern us deeply, for upon them a number of surgical authorities base their procedures in the attempt to establish a rational treatment. On the strength of these has surgery again invaded a new territory, where previously her interference was not thought of. The mechanical theories attribute the origin of the symptoms to pressure on the organs of the neck by the goiter itself. Some consider the vessels as suffering chiefly from this pressure; others the sympathetic or vagus; and still others believe the symptoms to result from pressure on nerves and vessels together. In support of the mechanical theory, its advocates pointed to the clinical observation of cases in which the onset of nervous symptoms coincided with the growth of a previously existing goiter of whatever character, and in which at the same time other evidence of pressure was manifest by the inter-

[1] Read before the Association of American Physicians in Berlin.

[2] Marie: Contribution à l'étude et au diagnostic des formes frustes de la maladie de Basedow.—Paris, aux Bureaux du Progrès Med. 1886.

currence of dyspnea or dysphagia, for instance. However effectually the clinical testimony of the opponents of the mechanical theory confuted it as applying to Graves' disease in general, it could not be denied that the theory seemed applicable to a certain number of cases. Just as unlikely as it was that exophthalmos and tachycardia existing for months or years before the development of a goiter could be caused by pressure from this goiter, just so likely did it seem, in the other class of cases, that the increase of size in the thyroid gland was directly responsible for the nervous symptoms following it. Especially so was this the case when other differences in the two classes of cases seemed to be apparent. Thus, as early as 1869, Eulenburg[1] attempted the differentiation of "true morbus Basedowii" from struma causing irritation of the sympathetic. As characteristic of the latter condition, he gives symptoms of *irritation* on the part of the pupil and vasomotor nerves, while in "true Basedow's disease" pupillary symptoms are entirely absent, and paralytic symptoms on the part of the vasomotor nerves of the head are manifest. He likewise mentions stenocardial attacks and psychic symptoms as belonging to true morbus Basedowii, and not to the other.

Gauthier[2] is of the same opinion regarding these two forms. He speaks of a "surgical Basedow's disease," caused by the primary hypertrophy of the thyroid, and of true Basedow's disease. He gives the clinical history of a case which, in this connection, is very interesting. A female patient, aged sixty, presented herself with a cystic goiter of thirty years' standing. "She had all the symptoms of Basedow's disease." The cyst was emptied by puncture, and injected with iodin, and the patient was discharged, cured of her symptoms. Seven years afterward the gland enlarged anew, and the patient again presented the symptoms of Basedow. Her death prevented a second operation. The clinical course of this case certainly renders it probable that the nervous symptoms were due to the size of the tumor. Gauthier cites a case of MacNaughton Jones's, and one of Ollier's of similar character. Dubrueil[3] also reports a case in a young man of twenty-two, who had a goiter of the right side, the size of an apple, and of two years' standing. The tumor fluctuated, and was absolutely without pulsation; slight bilateral exophthalmos was present, and the pupils were dilated, "especially the right one;" the pulse was 120; the heart's action was abnormally strong, and a systolic blowing could be heard at the apex. About 200 g. of a brownish fluid were withdrawn from the cyst by puncture; but as it refilled in a few days it was enucleated. The man was discharged "cured," after several weeks, with a pulse of 80. It would seem that this case should be classed under the heading "surgical," if such a term be justifiable, and I think that, with our present imperfect knowledge of the subject, it is so.

However, the mechanical theory is applicable to a limited number of cases only, and for the explanation of the far greater number recourse has been had to the nervous theories, although they are almost entirely hypothetic or inferential. The result of the surgeon's interference in cases of true Graves' disease, however much the patients may have been benefited, has been only to add to the mystery at present enveloping the pathology of the disease. I have thought it advisable therefore to search in the literature for enlightenment, to ascertain what has been done, and what conclusions may be drawn on this subject.

As pioneers in subjecting exophthalmic goiter to surgical procedure we must consider Jones, Gauthier, Ollier, and Tillaux. In the cases operated upon by Jones and Ollier, however, the indications seem to have been rather the symptoms caused by the size of the tumor than the nervous manifestations. This, indeed, would also appear to have been the case with Tillaux, although in his report he discusses the case as one of Basedow's disease. Rehn seems to have been the first to operate in a case of Graves' disease, although the report renders it likely that the large struma was not the primary trouble. In the majority of cases reported, both before and after his, the size of the tumor would have been sufficient indication for the performance of the operation. It is upon those cases, however, in which the thyroid enlargement plays a lesser rôle, that we must depend in appraising the value of operation in true Graves' disease; not that a large goiter is a bar to the diagnosis, but because the more typical cases are those in which the thyroid tumor does not assume very large proportions.

It is by no means easy in passing on the cases reported in the literature to distinguish between true Graves' disease and symptomatic or "surgical" exophthalmic goiter, and this is highly desirable. Aside from the fact that the clinical identity of these two conditions is by no means positive, and that this classification is to a very large degree arbitrary; apart from the fact that it is impossible in many cases to differentiate, clinically, the "surgical" from the "true" form of Graves' disease, the reports in very many or most of the cases are so imperfect that it is difficult to estimate their value in attempting to arrive at conclusions. The importance of properly interpreting cases reported is manifest, for upon this largely rests the position in surgery that operation for exoph-

[1] Eulenburg: Virchow-Hirsch Jahresb. 1869, ii, p. 273.
[2] Gauthier: Lyon Médicale, No. 22, 1888.
[3] Dubrueil: Gaz. de Paris, lviii, 87.

thalmic goiter is to hold. Furthermore, by the results of previous operations must we form the indications for surgical procedure, if we believe this to be justifiable.

Assuming, then, that we have good reports before us, there still remain very considerable difficulties in our way. In the first place, the nature of the struma itself has given rise to doubt. Trendelenburg, for instance, in reviewing a case reported by Tillaux, takes exception to the diagnosis "Basedow's disease," because of the absence of exophthalmos, and because the extirpated struma contained a cyst filled with blood. Neither of these circumstances can warrant a denial of the diagnosis, though we confess that they both render it somewhat doubtful. We are willing nowadays to diagnosticate Graves' disease when the triad of symptoms is not typically present; we are even taught to diagnosticate it, though two of them be absent. On the other hand, we must recognize the fact that the struma may undergo hyperplastic and degenerative changes in typical cases of Graves' disease.

Interesting in this connection are the somewhat remarkable conclusions of Schrang.[1] This author reports that of 3304 cases of ordinary goiter examined by him, during life and post mortem, 344 of them, 10 per cent., had heart-trouble of one kind or another, without valvular lesion; a considerable number more had valvular lesions. A large number of these patients consulted the physician primarily on account of palpitation of the heart, and so convinced is Schrang of the relation between goiter and heart-disease, that he declares the cause of death in goitrous patients, as a usual thing, to be heart-failure, whether from simple dilatation, degenerative changes, or actual valvular lesions. As the result of his long experience, he believes that certain forms of goiter can cause "cardiac degeneration;" and, what is still more remarkable, that hyperactivity and hypertrophy of the heart can produce a goiter. In what manner this can be brought about he does not clearly show, relying on the statistics mentioned for his statement. This is of importance to us, in so far as it must make us very cautious, in this investigation, about accepting the diagnosis, "true Graves' disease," in any case in which the three cardinal symptoms are not present, and in which the clinical history given is not sufficiently complete to remove all doubt as to the nature of the case. Thus, in this very case of Tillaux's, Trendelenburg is perfectly justified in his doubt, as exophthalmos was absent, and the tumor was large enough to cause dyspnea, and was of cystic character.

In attempting to conclude whether or not any cases reported as cured by operation were cases of "true Graves' disease," I believe the clinical history to be the safest criterion; that is to say, if exophthalmos and tachycardia were present before the development of the goiter in a given case, it certainly seems evident that the goiter, *by virtue of its size*, could not be considered their cause.

Let us now turn to the literature, and endeavor to select therefrom all cases of exophthalmic goiter that were subjected to surgical interference, whether this consisted in extirpation with the knife or in the older methods, such as the use of the seton and caustic. The total number of cases found is forty-one; of these, extirpation of the goiter was practised in thirty-three; and of these, partial extirpation in twenty-one, total extirpation in one; and in the remaining eleven cases the exact nature of the operation is not given. Two of the patients operated upon died. The mortality of these extirpations is, therefore, about 6 per cent. Three cases were treated by ligature of the thyroid arteries, and five by the seton, caustic, or simple puncture; all of these recovered. Twenty-five were reported cured of all symptoms; eleven were improved; three were unimproved; and in fact in one of these three cases the exophthalmos is said to have become more pronounced after the operation. Of the forty-one cases reported, twenty-five are said to have been cured, but only in fifteen does the report cover a period of more than six months from the time of operation; several are reported after intervals of from six weeks to four months. According to the reports of the various authors, more cases are characterized as "cured" than my summary will show. In several cases the author, after reporting his case "well," goes on to tell how the "exophthalmos was very much less," the "struma almost disappeared," "the pulse now perfectly regular, and beating 80–90 a minute," and so on. As long as any of the cardinal symptoms remain after operation the case cannot be said to have been cured; amelioration of the patient's condition can in such a case justify only the predicate "improved."

For the sake of a better appreciation of the cases, I have tried to divide them into three classes from the histories given. I have classed as "surgical" those cases in which the nervous symptoms seemed directly dependent upon the size and growth of the goiter. Not only does Eulenburg mention this class of cases, but Gowers[1] also says that "a large struma, of endemic origin, often presses on the sympathetic, and perhaps on the vagus, and causes palpitation and exophthalmos." I have considered as instances of "true Graves' disease" only such cases in which

[1] Schrang: Arch. f. klin. Chir., xxxiv, 1886.

[1] Gowers: Diseases of the Nervous System, 1890.

No.	Reported by	Reported in	Result.	Nature of case.	Struma present	Exophthalmos present	Tachycardia present	Reported after	Remarks.
1	MacNaughton Jones,	Brit. Med. Journ., Dec. 19, 1874.	Improved	Surgical	×	×	×	...	Treated by MacNaughton Jones with setons and zinc chlorid. Pupils dilated; right eye more prominent.
2	Gauthier,	Lyon Médicale, 1888, 22.	"	"	×	×	×	...	Cyst emptied and injected with iodin; seven years afterward gland enlarged again, and symptoms returned.
3	Fraser,	Edinb. Med. Journ., 1887, xxxiii, p. 347.	"	True	×	×	×	10 yrs.	First noticed palpitation and flushings; eighteen months afterward struma, dysphagia, dyspnea. Partial extirpation. Lister operator.
4	Tillaux,	Bull. Acad. de Méd., 1880, 17.	Well	Surgical	×	o	×	...	Extirpation of cystic goiter. Weakness of sight; dyspnea. Trendelenburg doubts diagnosis.
5	Bomsier,	Thèse d'Aggregation de Paris, 1880	"	"	×	×	...	...	Hematic cyst treated by Ollier with caustics.
6	Tillaux,	Bull. de la Soc. Chirurg., 1881.	" (?)	"	×	×	×	...	Sarcoma; extirpation; death afterward from recurrence.
7	Bénard,	Contrib. à l'Etude de Goitre Exoph. Paris, 1882.	"	Doubtful	...	...	...	...	Extirpation.
8	Bénard,	" " "	"	"	...	...	...	...	Extirpation.
9	Bénard,	" " "	"	"	...	...	...	...	Cauterization and seton followed by shrinkage and cure.
10	Bénard,	" " "	"	Surgical	...	...	...	...	Sarcoma; treated as previous case; no details given.
11	Rehn,	Berl. klin. Wochen., 1884, 11.	"	True	×	×	×	1½ yrs.	Palpitation first, followed by goiter; heat-flashes; dyspnea. Total extirpation.
12	Rehn,	" " "	"	Doubtful	×	×	×	1 yr.	Hyperidrosis, heat-flashes, dyspnea, tremor. Extirpation.
13	Rehn,	" " "	Improved	"	×	o	×	...	Sensations of heat and cold, general nervousness. Partial extirpation.
14	Mikulicz,	Wien.med.Wochen. 1886, 1–4.	Well	Surgical	×	×	×	3 yrs.	Resection. Goiter very large; dyspnea.
15	Weidemann,	Dissert. Berlin, 1886	"	"	×	×	×	...	Dyspnea; pupils dilated. Extirpation of right and middle lobes.
16	Josipovici,	" " 1887	"	True	×	×	×	6 yrs.	Operator Wolff. Struma came after exophthalmos and palpitation; struma small; dyspnea, hyperidrosis. Extirpation of one-half.
17	Josipovici,	" " 1887	Improved	Doubtful	×	×	×	...	Ultimate result?
18	Dubrueil,	Gaz. de Paris, 1887, 34.	Well	Surgical	×	×	×	...	Goiter cystic, no pulsation, pupils dilated. Enucleation of cyst.
19	Frank,	Berl. klin. Wochen., 1888.	Death	Doubtful	×	?	×	...	Death from operation.
20	Frank,	" " "	Unimproved	"	×	×	×	...	Exophthalmos increased after operation.
21	Kümmel,	Deutsche med. Wochen., 1890,438	Improved(?)	"	×	×	×	6 wks.	
22	Leucke,	Schmidt's Jahrb., 1890, 138.	Well	True	×	×	×	7 mos.	Palpitation and dyspnea first, then struma. Extirpation of one-half of gland.
23	Leucke,	" " "	"	"	×	×	×	6 mos.	Exophthalmos first, struma afterward. Extirpation of one-half of gland.
24	Rupprecht	" " "	"	"	×	×	×	...	Struma appeared three years after palpitation. Extirpation of one-half.
25	Gausen,	" " "	Unimproved	Doubtful	?	?	?	...	Reported in discussing the previous case. Details not given.
26	Gausen,	" " "	"	"	?	?	?	...	
27	Leucke,	Deut.med.Wochen., 1892, No. 11.	Death	"	×	×	×	...	Death from pulmonary edema.
28	Leucke,	" " "	Well	Surgical	×	o	×	...	Struma large; dyspnea, pulmonary tuberculosis complicating. Extirpation of one-half.
29	Leucke,	" " "	"	Doubtful	×	o	×	...	Extirpation of one-half.
30	Dreesmann,	" No. 5 "	"	True	×	×	×	2 yrs.	Struma appeared after palpitation; tremor, hyperidrosis. Ligation of vessels by Kocher.
31	Dreesmann,	" " "	Improved	"	×	×	×	1 yr.	Exophthalmos, then struma and palpitation. Ligation of vessels by Trendelenburg. One year later still slight struma and exophthalmos.
32	Dreesmann,	" " "	"	Doubtful	×	×	×	...	Ligation of vessels by Trendelenburg.
33	Stierlin.	Beiträg. z. klin. Chir. 1892.	Well	True	×	o	×	1½ yr.	Palpitation before struma; tremor; no Graefe's sign. Extirpation of one-half.

No.	Reported by	Reported in	Result.	Nature of case.	Struma present	Exophthalmos present	Tachycardia present	Reported after	Remarks.
34	Stierlin,	Beiträg. z. klin. Chir. 1892.	Well	Doubtful	×	×	×	1½ yr.	Tremor; no Graefe's sign. Extirpation of one-half.
35	Stierlin,	" " "	"	"	×	o	×	1 yr.	Tremor, dyspnea. Improvement slow. Complete extirpation of one-half.
36	Frank,	" " "	Improved	"	×	×	×	...	Dyspnea. Extirpation of one-half.
37	Wette,	Arch. f. klin. Chir., Bd. 44, p. 785.	"	True	×	×	×	4½ mos	Some exophthalmos still existed, though patient greatly improved. Operator Rehn. Extirpation partial.
38	Wette,	" " "	Well	Doubtful	×	×	×	5 yrs.	Struma for years, afterward exophthalmos and palpitation. Extirpation partial. Operator Riedel.
39	Wette,	" " "	Improved	"	×	×	×	3 yrs.	Struma for ten years; struma cystic; still some exophthalmos. Extirpation partial. Operator Riedel.
40	Wette,	" " "	Well	"	×	×	×	2 yrs.	Struma very large, tremor, hyperidrosis, dyspnea. Extirpation partial. Operator Riedel.
41	Determeyer,	Deut.med.Wochen., 1893, iii, 16.	Improved(?)	True	×	×	×	1 yr.	Pulse still 82–90. Graefe phenomenon still present. Partial extirpation by Rotter.

the struma was not the first of the classic triad to appear, and, with one exception, those in which goiter, exophthalmos, and tachycardia were all present. As "doubtful" I have classed the remaining cases when the history reported would not warrant my including them even under such arbitrary heads as the others. Classed as cases of "true Graves' disease," there were then eleven, of which seven were reported cured; and as cases of "surgical Graves' disease," were ten, of which nine were cured; and as "doubtful cases," were twenty, of which nine were cured. If we assume the doubtful cases to have been instances of true Graves' disease, we have thirty-one cases, of which sixteen were cured, that is about 50 per cent.

The duration of the cure must greatly interest us. Unfortunately, there is nothing mentioned of this in many of the reports. Only once is there mention of recurrence, and this was in the case reported by Gauthier, already mentioned. This was probably not a case of "true Graves' disease." Three cases are reported as being well five years or more after operation, two after three years, two after two years, three after one and a-half years, one after seven months, and one after six months.

From the study of these cases, it seems evident to me that whether the term "surgical" be appropriate or not, in the development of large tumors of the thyroid gland of whatever nature there may arise a symptom-complex very similar to, if not identical with, true Graves' disease. In two of the cases the goiter was reported as sarcomatous, in five as cystic, and in several as very vascular; in the greater number of cases, all description of the nature of the goiter is omitted.

I certainly believe that cases of true Graves' disease have been greatly relieved of their symptoms by operation; perhaps some of them have been cured.[1] It seems to me unwarrantable to draw positive conclusions as to the pathology of Graves' disease from the results of these operations alone; in fact, it seems almost as difficult to do so in those cases of the so-called "surgical" form. Josipovici,[2] Weidemann,[3] and others conclude that, inasmuch as the extirpation of one-half of the tumor was followed by disappearance of the symptoms, the symptoms were due to pressure from it. How frequently does the surgeon observe goiters of large size which have exerted such pressure on the organs of the neck that the functions of breathing and swallowing have been almost abolished, and yet the sympathetic has escaped pressure in some wonderful way; these cases present no symptoms of Graves' disease. The symptom that, according to Eulenburg and Gowers, speaks strongly in favor of pressure on the sympathetic, pupillary dilatation, is found reported three times only in our forty-one cases; yet a considerable number of the goiters are reported as of large size. How equally inconsistent with the pressure-theory are those cases presenting all of the symptoms of Graves' disease in a marked degree, but in which the struma was by no means the first of the

[1] During the discussion of this paper it was suggested that the test of the cutaneous resistance to the electric current might be a good test of the completeness of the cure after operation; this has, to my knowledge, been tried by no one as yet.

[2] Josipovici: Zur Therapie d. Morb. Based. Dissert., Berl., 1887.

[3] Weidemann: Kropfextirp. im Augusta Hosp. Dissert., Berl., 1886.

symptoms to appear, and even never equalled a peach in size. To bring our mystification to a climax, then, the extirpation of one-half of such a struma is followed by the disappearance of all the symptoms.

Rehn,[1] in his first publication on the subject, after reporting favorable results from four operations, suggested that the symptoms of Graves' disease may be reflex manifestations on the part of the sympathetic nerve-endings in the thyroid gland. Hack[2] afterward reported a cure of Graves' disease by nasal operation, and since this several others have recorded similar success. Hack's case was one of typical Graves' disease in a patient afflicted with chronic hypertrophic rhinitis; repeated cauterization was followed by cure of the Graves' disease, as well as the rhinitis. Hack's inference in this case is similar to Rehn's, in so far as he believed a continued irritation of the end-organs of the sympathetic in the nasal mucous membrane to underlie the nervous symptoms and the goiter.

Möbius,[3] after calling attention to the similarity between Graves' disease and myxedema, cretinism and the cachexia strumipriva, all of which are supposed to depend upon pathologic inactivity of the thyroid gland; and after noting that signs of Graves' disease may appear in the course of any goiter, and that operative measures upon the goiter often succeed in materially influencing the Graves' disease, comes to the conclusion that the principal underlying cause of Graves' disease is a morbid change in the functional activity of the thyroid gland; the cause of this morbid activity he acknowledges to be entirely unknown, but suggests its being an intoxication. Wette[4] comes to a similar conclusion, though by the much less logical reasoning that as the removal of the goiter is followed by disappearance of the nervous symptoms, the goiter must be the etiologic factor underlying the Graves' disease.

One factor, however, which occurs to me as worthy of consideration in this connection has failed being mentioned by any of these authors; I refer to the effect of the operation *per se*, aside from anything akin to suggestion. It strikes me that a certain analogy exists, in this relation, between epilepsy and Graves' disease. The fact that many cases of exophthalmic goiter seem to date directly from the occurrence of a bodily injury, mental excitement or shock, and that we have no positive proof, as yet, that the strumectomy has achieved a lasting cure in Graves' disease, greatly strengthens, for me, at least, this similarity. After considerable search in the literature I have failed to find anything referring to the effect of general surgical operations on the course of Graves' disease. Experience in this connection might be expected to aid us materially in our consideration of the subject.

Gowers[1] gives 25 per cent. as the proportion of cases of true Graves' disease cured or brought to a standstill by non-operative methods. In his last report of 250 cases of all kinds of goiter, Mocher gives a mortality from strumectomy of 1.8 per cent.; it is true that his first cases of Graves' disease (a report of which in detail I have not been able to find) were attended with a greater mortality than his other strumectomies. He expresses the conviction, however, that with our present improved methods of operating, exophthalmic goiter should be no more dangerous to operate upon than the others, and I think that the results reported since his publication bear this out. When we consider the slight danger to life from the operation, if carried out according to the most improved principles; and when we consider the favorable results thus far obtained by surgical treatment, it seems to me that in cases of true Graves' disease of such severity as to seriously harass the patient, and when the other methods have failed to arrest the progress of the disease, operative interference is indicated. In cases of the so-called "surgical" kind, or in any case in which the goiter is of sufficient size to cause stenosis of the trachea or esophagus, the indications for operation will be self-evident. However this may be, we can regard the operation for true Graves' disease, as yet, only as empirical; all the more is it important, therefore, that future cases be reported with utmost care in the details. As far as the choice of operation is concerned, I shall have little to say. The operation at present almost exclusively performed is the extirpation of one-half of the gland, usually the larger half being chosen. The superior and inferior thyroid arteries are tied as a preliminary step and the isthmus is divided between ligatures. Ligature of the thyroid arteries alone might well come up for consideration; however, three cases only have been reported, one as well, and the other two as improved. Total extirpation, practised as it was at first, is at the present day, of course, out of the question.

Although we can scarcely exclaim with the enthusiasm of a recent German author that "henceforth Basedow's disease belongs in the surgical ward," the surgeon's past work in this field has certainly merited encouragement. We shall express the hope that future experience may result in further justification of the surgical treatment, so that increase of knowledge may convert what is now an empirical procedure into one thoroughly rational.

[1] Rehn: Berl. klin. Woch., ii, 1884.
[2] Hack: Deutsche med. Woch., xxv, 1886.
[3] Möbius: Deut. Zeitschr. f. Nervenheilk., Bd. i, Hefte 5 u. 6.
[4] Wette: Langenbeck's Arch., Bd. lxiv, p. 788.

[1] Gowers: loc. cit.

A STUDY OF THE "ORGANIC EXTRACTS" "CEREBRINE" AND "CEREBRIN."

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The announcement made by Dr. W. A. Hammond in an article entitled "On Organic Extracts, their Preparation and Physiological and Therapeutical Effects," which appeared in the *New York Medical Journal*, of January 28th last, was not altogether a surprise, as Constantine Paul, taking the cue from Brown-Séquard, had been pursuing a parallel train of investigation. Abstracts or reprints of the same article were published in nearly all of the medical journals in the United States and Canada; a paper of like character even found place in the *North American Review*.

Having pretty thoroughly investigated the claims of the Brown-Séquard Fluid—which so far as evidence was concerned, appeared to possess some basis of truth, but when subjected to careful and prolonged control, proved an utter failure aside from psychic influence—I had sufficient curiosity to examine into the claims of "Cerebrine" (Hammond) and, likewise, "Cerebrin" (manufactured by Parke, Davis & Co.), as both alike rest upon the same presumptions, as promulgated in the medical and general press.

Dr. Hammond's claims, which apply equally to "Cerebrin" (Parke, Davis & Co.), are as follows:[1]

"Five minims of this extract constitute a hypodermatic dose.

"The most notable effects on the human system of a single dose are as follows, though in very strong, robust, and large persons a somewhat larger dose is required, never, however, exceeding ten minims:

"1. The pulse is increased in the course of from five to ten minutes, or even less in some cases, by about twenty beats in a minute, and is rendered stronger and fuller. At the same time there is a feeling of distention in the head, the face is slightly flushed, and occasionally there is a mild frontal, vertical, or occipital headache, or all combined, lasting, however, only a few minutes.

"2. A feeling of exhilaration is experienced which endures for several hours. During this period the mind is more than usually active and more capable of effort. This condition is so well marked that if the dose is taken about bedtime wakefulness is the result.

"3. The quantity of urine excreted is increased, when other things are equal, by from eight to twelve ounces in the twenty-four hours.

"4. The expulsive force of the bladder and the peristaltic action of the intestines are notably augmented—so much so that in elderly persons in whom the bladder does not readily empty itself without considerable abdominal effort this action is no longer required, the bladder discharging itself fully and strongly, and any existing tendency to constipation disappears, and this to such an extent that fluid operations are often produced from the rapid emptying of the small intestine.

"5. A decided increase in the muscular strength and endurance is noticed at once. Thus I found in my own case, that I could 'put up' a dumb-bell weighing forty-five pounds fifteen times with the right arm and thirteen times with the left arm, while after a single dose of the extract I could lift the weight forty-five times with the right arm and thirty seven times with the left arm.

"6. In some cases in elderly persons increase in the power of vision is produced and the presbyopic condition disappears for a time.

"7. An increase in the appetite and digestive power. Thus, a person suffering from anorexia and nervous dyspepsia is relieved of these symptoms, temporarily at least, after a single dose hypodermatically administered.

"These effects are generally observed after one hypodermatic injection, and they continue for varying periods, some of them lasting for several days. The most notable effects are seen in the general lessening of the phenomena accompanying advancing years."

With the coöperation of Dr. George Suttie, and also a personal friend deeply interested in scientific matters, who is the manager of a large manufacturing establishment, I was able to secure, on three different days, twelve men for experimental purposes. These men voluntarily submitted to the ordeal, without any knowledge whatever of the medicaments employed, further than might be conveyed by the assurance that no danger would arise therefrom; they, moreover, during the interval between the hourly recording of pulse, temperature, etc., pursued their ordinary avocations, all being of the class denominated "laboring," some employed at very heavy work; many, moreover, were obliged to climb a flight of stairs to reach the room wherein the experiments were conducted.

The fluids employed in each case were: 1st. "Cerebrine" (Hammond) in original packages, as obtained from the Columbia Chemical Co.; 2d. "Cerebrin" (Parke, Davis & Co.) in original packages; 3d. A mixture of my own, composed of 38 parts of borax, 42 parts of glycerin, and 40 parts of water.

One dozen of Hicks' thermometers with Kew certificates were obtained, and these, moreover, specially rated preparatory to experimentation, and the ratings carefully considered and verified after each individual test.

A new hypodermatic syringe was set apart for each fluid, and long before the experiments, and during the same, kept constantly immersed in absolute alcohol.

The three fluids had very nearly the same specific gravity, and the same general appearance.

Experiment No. 1, Table 1.—Dose of each fluid employed, five minims, hypodermatically.

Four men numbered respectively 1, 3, 10, and 11, and aged twenty-three, thirty-seven, thirty-five, and twenty-six years, all receiving "Cerebrine" (Hammond).

At 7 A.M., prior to receiving injection, No. 1's respiration was 17; temperature, 98.5°; pulse, 86. At 8 A.M., forty-five minutes after injection, tem-

[1] New York Medical Journal, January 28, 1893.

perature, 99°; pulse, 76. At 1 P.M., respiration, 15,; temperature, 98.6°; pulse, 76. At 7 P.M., respiration, 14; temperature, 98.5°; pulse, 64. Averages for the day, respiration, 15.33; temperature, 98.554°; pulse, 76.15.

At 7 A.M., prior to receiving injection, No. 3's respiration was 16; temperature, 98.7°; pulse, 78. At 8 A.M., forty-five minutes after injection, temperature, 99°; pulse, 76. At 1 P.M., respiration was 16, temperature, 98.5°; pulse, 72. At 7 P.M., respiration, 16; temperature, 98.5°; pulse, 72. At 7 P.M., respiration, 16; temperature, 98.5°; pulse, 66. Averages for the day, respiration, 16; temperature, 98.56°; pulse, 69.538.

At 7 A.M., prior to receiving injection, No. 10's respiration was 18; temperature, 98.6°; pulse, 88. At 8 A.M., forty-five minutes after injection, temperature, 98.5°; pulse, 80. At 1 P.M., respiration, 18; temperature, 98.5°; pulse, 76. At 7 P.M., respiration, 18; temperature, 98.5°; pulse, 68. Averages for the day, respiration, 18; temperature, 98.516°; pulse, 73.380.

At 7 A.M., prior to receiving injection, No. 11's respiration was 15; temperature, 98.7°; pulse, 88. At 8 A.M., forty five minutes after injection, temperature, 98.7°; pulse, 66. At 1 P.M., respiration, 16; temperature, 98.5°; pulse, 82. At 7 P.M., respiration, 16; temperature, 98.5°; pulse, 82. Averages for the day, respiration, 15.66; temperature, 98.546°; pulse, 82.769.

The averages for all who received "Cerebrine" (Hammond) were: At 7 A.M., before injection, respiration, 16.5; temperature, 98.625°; pulse, 85. At 8 A.M., forty-five minutes after injection, temperature, 98.8°; pulse, 79.5. At 1 P.M., respiration, 16.25; temperature, 98.525°; pulse, 76.5. At 7 P.M., respiration, 16; temperature, 98.5°; pulse, 70.

It is unnecessary to go over these tables seriatim, as they speak for themselves. It will be seen that Nos. 4, 6, 7, and 12 received "Cerebrin" (Parke, Davis & Co.), and Nos. 9, 2, 5, and 8, a solution of borax, glycerin, and water.

"Cerebrin" (Parke, Davis & Co.), gave very little variation in results from those yielded by "Cerebrine" (Hammond), not enough to be of value on comparison. The third fluid was practically as effective as the two preceding. In no instance was the average temperature increased to the amount of 0.07 of a degree, and the highest average temperature reached was that of No. 12, with "Cerebrin" (Parke, Davis & Co.).

In connection with this it may be well to remark that the slight acceleration of pulse which occurred at the beginning of the experiments, and which was noticed as much before the injection as afterward, was due, probably, to some slight mental doubt on the part of those experimented upon. But the innocuous character of the experiments was pretty well known throughout the concern where these men were employed before the day was over, hence, as a consequence, the second day's experimentation, as shown by Table No. 2, witnessed considerably less variation.

EXPERIMENT No. 2. TABLE No. 2.—Dose, ten minims each of "Cerebrine" (Hammond); "Cerebrin" (Parke, Davis & Co.), and solution of borax in glycerin and water.

It will be observed that the average respiration at 7 A.M., prior to receiving injection, for those receiving Hammond's fluid, was 17.75; temperature, 98.5°; pulse, 80. At 8 A.M., forty-five minutes after the ingestion of the fluid, the temperature was in no instance elevated, and the average pulse had fallen to 72.5. At 1 P.M. the total average respiration was 18; temperature, 98.525°; pulse, 72.25. At 7 P.M., the respiration was 16.75, temperature 98.5°, pulse 69.

EXPERIMENT No. 3. TABLE No. 3.—Dose, fifteen minims each of "Cerebrine" (Hammond); "Cerebrin" (Parke, Davis & Co.), and solution of borax in glycerin and water.

The twelve individuals experimented with on this occasion were selected from those of the two previous experiments. Nos. 1, 3, 9, 8, 6, 12, and 10 being respectively Nos. 3, 2, 8, 9, 1, 12, and 5 of the second experiment, and Nos. 4, 7, 5, 2, and 10 were respectively Nos. 12, 11, 4, 2, and 5 of the first experiment.

Practically the same ratio as in the two preceding experiments obtained.

Further, as to all three experiments, the claims made by Dr. Hammond were in no instance borne out either as to pulse, respiration and temperature, exhilaration, flushing, wakefulness, increased quantity of urine, expulsive force of bladder and peristalsis of the intestines, increased muscular strength, increased power of vision, or increased appetite and digestion.

In addition to all this, I myself ingested on various occasions doses varying from five minims to one-half ounce of both "Cerebrine" (Hammond) and "Cerebrin" (Parke, Davis & Co.), without any appreciable effect; and so far as the assertion that a dose of "Cerebrine" (Hammond) induces insomnia is concerned I am obliged to dissent. One-half ounce ingested at 8.30 P.M. did not in the least influence sleep, which was profound an hour and a half later.

There is but one conclusion to be formed, viz., that "Cerebrine" (Hammond), "Cerebrin" (Parke, Davis & Co.) so-called, and a solution of borax in glycerin and water, are equally efficacious —or rather equally inert for good or evil.

TABLE I.—TUESDAY, JUNE 6, 1893. DOSE 5 MINIMS OF EACH FLUID.

No.	Fluid.	Age.	Respiration.	7 A. M. Temp.	7 A. M. Pulse.	8 A. M. Temp.	8 A. M. Pulse.	9 A. M. Temp.	9 A. M. Pulse.	10 A. M. Temp.	10 A. M. Pulse.	11 A. M. Temp.	11 A. M. Pulse.	12 M. Temp.	12 M. Pulse.	Respiration.	1 P. M. Temp.	1 P. M. Pulse.	2 P. M. Temp.	2 P. M. Pulse.	3 P. M. Temp.	3 P. M. Pulse.	4 P. M. Temp.	4 P. M. Pulse.	5 P. M. Temp.	5 P. M. Pulse.	6 P. M. Temp.	6 P. M. Pulse.	7 P. M. Temp.	7 P. M. Pulse.	Respiration.	Total summary. Resp.	Total summary. Temp.	Total summary. Pulse.
1	Cerebrine, (Hammond)	23	17	N.	86	+.5	76	N.	76	N.	68	+.1	68	N.	64	15	+.1	76	N.	68	N.	70	N.	62	N.	72	N.	68	N.	64	14	15.33	98.554°	70.615
3		37	16	+.2	78	+.5	76	+.2	66	N.	78	N.	70	N.	64	16	N.	72	—.1	70	N.	68	N.	64	N.	66	N.	66	N.	66	16	16	98.560	69.588
10		35	18	+.2	88	N.	80	N.	80	+.1	72	N.	70	N.	70	18	N.	76	N.	72	N.	70	N.	68	N.	64	N.	76	N.	68	18	18	98.516	73.380
11		26	15	+.1	88	+.2	86	+.2	86	N.	84	N.	82	N.	76	16	N.	82	N.	84	N.	78	N.	82	N.	82	N.	84	N.	82	16	15 66	98.546	82.769
Average summary		30.3	16.5	98.625	85	98.8	79.5	before injection at 1 P. M.								16.25	98.535	76.5	at 7 A. M									98.5	70	16	16.247	98.544	74.075
4	Cerebrin (P.D.& Co.)	25	18	N.	64	—.5	56	N.	60	N.	62	+.5	64	—.1	64	19	+.1	70	N	70	N.	68	N	64	N.	62	N.	70	N.	69	18	18.33	98.500	64.840
6		46	18	+.2	68	N.	80	N.	80	N.	76	N.	80	N.	84	19	N.	82	N.	82	N.	82	N.	80	N.	80	N.	82	N.	82	18	18.33	98.515	81.230
7		42	16	N.	68	+.5	64	N.	70	N.	70	N.	74	N.	68	15	—.1	70	N.	70	N.	64	N.	60	N	62	N.	62	N.	64	15	15.33	98.530	66.615
12		34	18	+.1	84	N.	84	+.2	88	N.	84	N.	80	N.	88	17	N.	86	N.	86	N	88	N.	88	N.	88	N.	88	N.	86	18	17.66	98.523	86.008
Average summary		36.9	17.5	98.575	76	98.5	71	before injection at 1 P. M.								17.5	98.5	77	at 7 P.M.									98.5	75.25	17.25	17.412	98.517	74.672
9	Borax 35	26	17	+.1	76	+.5	80	N.	58	N.	54	N.	62	N.	58	16	N.	68	N.	68	N.	60	N.	56	N.	58	N.	58	N.	56	18	17	98.546	62.461
2	Glycerin 42	47	19	—.2	80	N.	70	—.1	68	+.2	74	—.2	70	—.1	64	19	N.	70	N.	80	—.1	74	N.	78	N.	84	N.	86	+.2	82	18	18.66	98.477	75.384
5	Water 40	34	14	+.3	55	N.	84	N.	84	+.2	60	N.	80	N.	76	15	N.	82	N.	86	N.	78	N.	76	N.	76	N.	78	N.	78	14	14.33	98.538	76.384
8	—M.	35	15	+.2	82	N.	76	N.	70	N.	76	N.	74	+.2	70	16	N.	78	N.	84	N.	76	N.	76	N.	76	N.	82	N.	80	14	15	98.53	76.923
Average summary		35.6	16.25	98.6	73.25	98.62	77.5	before injection at 1 P. M.								16.5	98.5	74.5	at 7 P. M.									98 55	74	16	16.25	98.522	72.788

TABLE II.—WEDNESDAY, JUNE 7, 1893. DOSE 10 MINIMS.

No.	Fluid.	Age.	Respiration.	7 A. M. Temp.	7 A. M. Pulse.	8 A. M. Temp.	8 A. M. Pulse.	9 A. M. Temp.	9 A. M. Pulse.	10 A. M. Temp.	10 A. M. Pulse.	11 A. M. Temp.	11 A. M. Pulse.	12 M. Temp.	12 M. Pulse.	Respiration.	1 P. M. Temp.	1 P. M. Pulse.	2 P. M. Temp.	2 P. M. Pulse.	3 P. M. Temp.	3 P. M. Pulse.	4 P. M. Temp.	4 P. M. Pulse.	5 P. M. Temp.	5 P. M. Pulse.	6 P. M. Temp.	6 P. M. Pulse.	7 P. M. Temp.	7 P. M. Pulse.	Respiration.	Total summary. Resp.	Total summary. Temp.	Total summary. Pulse.
2	Cerebrine (Hammond)	36	18	N.	104	N.	88	N.	84	N.	84	N.	86	N.	78	16	N.	76	N.	76	N.	82	N.	78	N.	70	N.	72	N.	72	17	17	98.5	80.769
6		29	20	N.	72	N.	70	N.	80	N.	76	N.	80	N.	76	18	N.	70	N.	72	N.	74	N.	72	N.	70	N.	72	N.	77	18	18.66	98.5	73.923
9		22	16	N.	70	N.	72	N.	70	N.	80	N.	80	N.	82	18	N.	84	N.	88	N.	82	N.	84	N.	78	N.	78	N.	70	16	16.666	98.5	78.307
11		36	17	N.	74	N.	60	N.	58	N.	56	N.	54	N.	56	20	+.1	59	N.	60	N.	65	—.2	59	N.	60	N.	58	N.	57	16	17.666	98.492	59.692
Summaries		30.9	17.75	98.5	80	98.5	72.5									18	98.525	72.25											98.5	69	16.75	17.50	98.498	73.172
1	Cerebrin (P.D.& Co.)	28	18	N.	74	—.1	66	N.	64	N.	80	N.	76	N.	72	19	N.	76	N.	80	N.	78	N.	74	N.	68	N.	65	N.	70	19	18.666	98.492	72.615
5		31	17	N.	84	N.	74	N.	66	N.	80	N.	78	N.	66	15	N.	80	N.	74	N.	72	N.	68	N.	69	N.	69	N.	68	16	16	98.5	72.923
7		34	18	N.	80	N.	80	N.	84	N.	80	N.	82	+.5	82	16	N.	84	+.8	92	N.	79	N.	78	N.	78	N.	78	N.	78	18	17.333	98.6	81.153
8		31	16	N.	70	N.	62	N.	66	N.	60	N.	66	N.	63	14	N.	72	N.	82	N.	66	N.	68	N.	62	N.	61	N.	66	14	14.666	98.5	66.461
Summaries		31	17.25	98.5	77	98.48	70.5									16	98.5	78											98.5	70.5	16.75	16.666	98.523	73.288

TABLE II.—WEDNESDAY, JUNE 7, 1893. DOSE 10 MINIMS—*continued.*

No.	Fluid.	Age.	Respiration.	7 A. M.		8 A. M.		9 A. M.		10 A. M.		11 A. M.		12 M.		Respiration.	1 P. M.		2 P. M.		3 P. M.		4 P. M.		5 P. M.		6 P. M.		7 A. M.		Respiration.	Total summary.		
				Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.		Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.		Resp.	Temp.	Pulse.
3	Borax 35	25	13	N.	84	N.	80	N.	80	N.	82	N.	84	N.	72	12	N.	76	N.	84	N.	70	N.	64	N.	70	N.	63	N.	58	14	13	98.5	74.384
4	Glycerin 42	35	14	N.	82	N.	64	—.2	62	N.	60	N.	66	N.	64	18	N.	72	N.	74	N.	68	N.	68	N.	62	N.	67	N.	69	16	16	98.485	67.538
10	Water 40	34	20	N.	88	N.	74	N.	77	N.	76	N.	84	N.	84	19	N.	86	N.	84	N.	80	—.2	70	+.3	78	N.	80	N.	76	18	19	98.507	79.769
12	—M.	28	16	N.	74	N.	68	N.	66	+.1	72	N.	78	N.	72	16	N.	70	N.	72	N.	68	N.	70	N.	64	N.	76	N.	71	16	16	98.507	70.846
	Summaries	30.6	15.75	98.5	82	98.5	71.5									16.25	98.5	76										98.5	68.5	16	16	98.499	73.134

TABLE III.—JUNE 13, 1893. DOSE 15 MINIMS.

No.	Fluid.	Age.	Respiration.	7 A. M.		8 A. M.		9 A. M.		10 A. M.		11 A. M.		12 M.		Respiration.	1 P. M.		2 P. M.		3 P. M.		4 P. M.		5 P M.		6 P. M.		7 P. M.		Respiration.	Total summary.		
				Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.		Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.		Resp.	Temp.	Pulse.
1	Cerebrine (Hammond)	25	16	N.	75	N.	72	N.	72	N.	70	N.	68	N.	70	13	N.	74	N.	70	N.	73	N.	72	N.	70	N.	66	N.	64	12	13.666	98.5	70.461
3		36	14	"	76	"	72	"	75	"	66	"	70	"	76	15	"	80	"	72	"	68	"	68	"	72	"	68	"	68	13	14.	98.5	71.615
4		34	18	"	74	"	74	"	72	"	76	"	75	"	78	17	"	76	"	74	"	74	"	74	"	74	"	78	"	78	18	17.666	98.5	75.153
7		26	15	"	87	+.2	82	"	80	"	70	"	78	"	78	16	"	80	"	80	"	78	"	78	"	76	+.1	76	"	77	16	15.666	98.523	78.461
	Summary	30.3	15.75	93.1	78	98.55	75									15 25	98.5	77.5										98.5	71.75	14.75	15.25	98.506	73.922
9	Cerebrin P.D.& Co.)	31	13	N.	66	N.	70	N.	70	N.	62	N.	64	N.	69	16	N.	70	N.	70	N.	65	N.	66	N.	62	—.2	59	N.	60	19	16.000	98.484	65.615
8		25	18	"	60	"	58	"	56	"	56	"	52	"	64	19	+.2	80	"	74	"	72	"	68	"	64	N.	63	"	59	18	18.333	98.515	63.538
5		22	15	"	74	"	70	"	71	"	78	"	76	"	76	16	N.	78	"	77	+.3	78	"	72	+.4	80	"	78	"	80	19	16.66	98.553	76.000
6		28	17	"	82	"	78	"	78	"	70	"	74	"	72	20	"	72	"	77	N.	72	"	74	—.2	77	"	72	"	72	21	19.333	98.484	74.615
	Summary	26.6	15.75	98.5	70.5	98.5	69									17.75	98.55	75										98.5	67.75	19 25	17.58	98.509	69.939
2	Borax, Glycerin, Water,	47	19	N.	62	N.	62	N.	62	N.	64	N.	56	N.	64	19	N.	68	N.	72	N.	70	N.	68	N.	66	N.	64	N.	61	18	18.666	98.5	64.538
12		28	16	"	67	"	68	"	70	"	70	"	70	"	68	18	"	72	"	72	"	72	"	73	"	72	"	68	+.2	66	18	17.333	98.515	69.846
10		25	17	"	79	+.2	78	"	76	"	75	"	71	"	62	16	"	70	"	70	"	68	"	66	"	62	"	62	N.	59	17	16.666	98.515	69.077
11		34	24	"	90	N.	88	"	88	"	80	"	84	"	84	22	"	86	"	84	"	80	"	84	"	82	"	82	"	84	22	22.666	98.5	84.307
	Summary	33.6	19	9°.5	74.5	98.55	74									18.75	98.5	74										98 55	67.5	18.75	18.833	98.507	71.942

CATHETERIZATION OF THE FALLOPIAN TUBES.[1]

By O. B. WILL, M.D.,
of Peoria, Ill.

In a paper read at the last annual meeting of this Association I alluded to some personal experience in catheterizing the Fallopian tubes, or, more accurately speaking, in making direct medicinal applications to the interior of those appendages. The subsequent interest and favorable comment elicited, together with the widespread disbelief in the possibility of such procedure, revealed by investigation into the literature of the subject, have impelled me to a further brief consideration of the matter at the present time.

In the course of my experimental ventures I had no thought of experiences either specially unique or particularly novel, thinking the procedure a natural result of an acceptance of the modern theory of contagion and continuity, as applied to the etiology of tubal disease, and antisepsis and drainage in its therapeutic relationship. I was surprised to find, on investigation, so great a dearth of literature on the subject. In all the leading text-books, society Transactions, and periodic literature at my command, nothing whatever on the subject is even hinted at, except in Dr. Henry C. Coe's article on "Anatomy of the Female Pelvic Organs," in the *American System of Gynecology*, in which he says, briefly: "Catheterization and cauterization of the tubes, as proposed by Tyler Smith and Froseip, are of course of no practical value, not to speak of the difficulty and danger of the procedure." In the great work of Pozzi reference to the matter is made also as follows:

"Is it possible to pass the sound into the Fallopian tubes? This is the explanation of some authors in those cases where the instrument penetrates deeply into the abdomen, and can be detected through its wall. That this may occur there must be a combination of very unusual circumstance—a latero-version of the uterus, which brings the orifice of the tube into the long axis of the cervix, and an exceptional wideness of its opening. This condition actually existed in a case observed by Bischoff, and was verified after death following ovariotomy. But in almost every one of the published cases of pretended sounding of the tubes, it is far more likely that there was a perforation of the uterus—a condition which is easily produced without exaggerated efforts when the uterus is softened and thinned from pregnancy or recent abortion, or when it is displaced. The benign character of such wounds has surprised most of those who have witnessed their production, and has induced them to seek an explanation which appears more plausible. This is without doubt the significance which must be given to two cases recently reported by Gonner, of Basel. Finally, we may note the possibility of establishing permanent false passages, and the introduction of the sound by the same route into the abdominal cavity. But these are, in truth, but pathological curiosities, with which we have very little to do."

Thus it will be seen that Pozzi expresses his doubts, not only as to the reliability of evidence offered, but even as to the possibility of such a procedure, except as revealed by post-mortem examination. If the latter opportunity had never manifested itself, he would probably never have accepted the evidence of the observer quoted in that connection. If the circumstance, indisputably proved, occurred once, may it not occur a second time, and if so, a third, and so on, as attention should be more particularly turned to the matter? Facts are oftentimes not discovered, simply because they are not sought for. The fact that the normal uterus and appendages present positions and conditions usually not favorable to the passage of a foreign body into their cavities, does not militate against the possibility of differing conditions in cases of disease and malposition.

Whatever may be the published or unpublished experience and views of others, however, I feel that I am in a position to take successful issue with those who think the difficulties of the manipulation insurmountable and the procedure impractical. There is not the least particle of doubt in my own mind as to the accuracy of conclusion of those who have reported accidental entrance of the sound into the Fallopian tube. I feel that I might go still further, and say with a degree of propriety equal to that of the author quoted, that the instances of perforation of the uterine wall without apparent effort were in all probability instances of unconscious catheterization of the Fallopian tubes. To my mind, the one insinuation is just as fair and well-founded as the other.

As many as fifteen years ago, whilst endeavoring to outline a submucous fibroid growth of the uterus, I found my sound pass at once to an unusual depth, and in great trepidation and alarm I put my patient to bed, fortified with opiates and prospective cold applications, under the impression that a perforation of the uterus had been made and peritonitis was to be feared. There was no development of inflammatory symptoms, however, and I classed the case in the category of those referred to by the author quoted, considering it an evidence of the tolerance manifested by the, at other times, intolerant peritoneal tissue. There was not even pain, and the patient persisted in the declaration that there was nothing the matter with her, and would not remain quiet. Some time later, in a case of hemorrhage, a similar occurrence took place with respect to the passage of

[1] Read before the Illinois State Medical Society, May, 1893

the sound, without any resulting untoward symptoms, although the patient was not put to bed but only admonished to keep quiet and report at once the development of pain or the like. About four years ago another case presented in the person of Mrs. K., a butcher's wife, large and stout, who had not been pregnant for half a dozen years, although anxious to become so and desirous of knowing the reason for her barrenness. I passed a small sound, quite gently, and was surprised to find that with but slight manipulation the instrument largely disappeared in the direction of the left cornu, evidently entering the abdominal cavity. Somewhat startled, I at once withdrew the instrument, with perfect ease, and inquired of the lady if she had suffered any pain from my manipulations. She assured me that she had not, and after plucking up more courage and giving the matter some thought I reintroduced the sound, not only into the uterus but likewise to a greater distance and in the same direction as before, and with equal ease and freedom from pain or distress. Somewhat emboldened by the apparent harmlessness of the venture, I cautiously manipulated the instrument with one hand, and by palpation with the other, alternately internally and externally, I satisfied myself that I had succeeded in introducing the sound into the left Fallopian tube. The woman left my office and returned to her home as well as usual. When she again called, at my request, my curiosity led me to a still further trial of the matter, with a like result, and with the additional one of passing the small sound, with some difficulty, however, into the right tube as well. This passage of the sound I have repeated a number of times in this patient, completely establishing the perfect feasibility, in some cases at least, of catheterization of the Fallopian tubes. This patient is yet within my reach and I can demonstrate on her, to the satisfaction of anyone, I think, the possibility, in certain cases, of introducing even a large sound into the Fallopian tube, through the normal uterine passage, and with little more than the slight curve usually characterizing the uterine sound. In the instance just mentioned the uterus is large, straight, somewhat retroverted, and the cervical canal large and roomy. Patient has never become pregnant.

One other marked case of this type came under my observation about one year and a half ago, in the person of a Jewess who, at that time, presented all the evidences of a tubal pregnancy. Menstruation had been suppressed for three months, and the enlargement, plainly distinguishable in the right uterine cornu and broad ligament, satisfied me that I had to do with a partial extra-uterine pregnancy. Hemorrhage, fitful in character, soon supervened and increased with such rapidity and severity that I was obliged to dilate the uterus and remove from its right cornu and tube-entrance what proved to be the product of conception, with the closely adherent placenta partly projecting, as I think, into the tubal cavity. At all events, a large uterine sound could be easily passed into the tube, and a smaller one with comparative readiness into the left one. The same manipulation can be accomplished at the present time, as I yet have the patient under my care for a constant discharge evidently emanating from the right tube and dating from the period of the pregnancy just recounted, and which I have thus far been unable to wholly control even by the use of injections of hydrogen dioxid, which are readily given, the fluid, however, passing into the peritoneal cavity if used in quantity, occasioning some pain and distress.

I have no doubt that some of my experience has been duplicated in the observation of others, and I hope that this account may serve to bring out such reports, even if a supposed mistaken diagnosis, or timidity in the face of authority, has thus far prevented this.

Since the experiences detailed, I have sought to embrace nearly every suitable opportunity to try the experiment of catheterization, and particularly so since the introduction of the practice of uterine drainage and therapeutic antisepsis. In a fair proportion of cases I have been enabled to do so successfully. I not only make this claim, but stand committed to a willingness to demonstrate the feasibility of the procedure, in suitable cases, to the satisfaction of anyone who cares to take the pains to corroborate what I say by personal observation.

All medical men will perhaps acknowledge the demonstrable egress and ingress of fluids in relation to the patulousness of the utero-tubal opening. What, then, is there to hinder the introduction into such opening of a suitable instrument? In a direct way, manifestly only the normally small diameter of the orifice. If this obstacle can be overcome in any way, serious interference with the procedure can be expected only in one or both of two directions, viz., the possible existence of a valve-like membranous enclosure, or, such relation of the angle of tubal insertion to the entrance axis of the uterus as to make the cavity of the tube inaccessible, no matter what its lateral dimensions.

Let us consider this matter for a moment. The regular triangular shape of the uterine cavity is presented, with the uterine os at one, and the respective tubal openings at the other two, of these angles. There is no special difficulty, even in strictly normal uteri, in reaching either tubal angle through the cervical opening. The only possible hindrances then to the procedure under consideration are those just referred to. That they are not always present is evidenced by the observations of myself and

others, just detailed. That they may be in many cases artificially overcome is equally demonstrable. The variation in size of the tubal meatus in different individuals, and under differing circumstances and conditions, and the mobility and adjustability of all the organs concerned, including the dilatability of the uterine os, render it possible to temporarily adjust positions and harmonize axes to an extent equal to most emergencies. It is unnecessary in this connection to go further into a description of anatomic conditions with which all intelligent physicians are familiar.

On subjecting a patient to the ordeal of an attempted catheterization of the Fallopian tubes, I am in the habit, as stated in my former paper, of first passing a small-sized sound, and with its bulbous point locate the ultimate limit of the tubal angle of the uterus. This is followed by the injection-tube of a Molesworth uterine dilator, which I have found in extremity to be a very efficient instrument for the purpose, bent to correspond to the shape of the withdrawn sound. This tube is made to follow the mental calculation as to direction marked out by the sound. If no entrance can be readily effected, a calculation based upon careful examination of relative positions must be made as to the necessity for dilating, or trying to change the relationship of the uterus, so as to admit of a proper adjustment of opening to opening. In at least a fair proportion of cases care and perseverance will be rewarded by a success demonstrable in all fulness by the injection of some innocuous fluid that will either distend the tube to an appreciable extent, or occasion an abdominal pain of sometimes circumscribed and at other times diffused character, but harmless. Really, one who has never tried it will be astonished to find with what ease entrance can occasionally be made, particularly in some cases of relaxed uteri and profuse, though simple leukorrheal discharge. It is not claimed that this desirable accession can be secured in all, or even in a majority of cases, but only that there are many in which the procedure can be accomplished, and that, too, with the greatest benefit from a therapeutic point of view. In fact, the practical value of these observations lies in their therapeutic relationship; and that does not necessarily mean either free drainage, cauterization, or the introduction of dangerous medicaments. It means more in the line of modern therapeutics and specific medication. It means sterilization in the sense of the exclusion or destruction of morbid entities and products; etiologic factors of continuous septic infection and diseased tissue-change, and subsequent reliance upon the restorative energy of the natural processes. It means a rational and conservative therapeusis in which is recognized the legitimacy of drainage and other antiseptic precautions in the treatment of diseases of the endometrium, and the logical sequence of following diseased conditions beyond that boundary into a well-recognized field of morbid activity.

My observations in this direction have not as yet carried me very far. Two classes of cases, however, clinically speaking, I have been enabled to treat with the greatest satisfaction by catheterization and injection into the Fallopian tubes. When there exists a persistent leukorrheal discharge of a catarrhal type, even in unmarried women, which even intra-uterine medication fails to control, I have often been enabled to stop it entirely by the use of injections of hydrogen dioxid into the Fallopian tube; for the fact is demonstrable that it is in just this very class of cases that the tubal meatus is found to be most patulous. It is not necessary that the injection-tube be introduced more than through the isthmus in order to accomplish the desired purpose. Beyond that point the increasing diameter of the Fallopian tube readily admits of the exudation of the hydrogen dioxid through the small eyelets near the end of the catheter I have mentioned. The other class of cases referred to is that in which we find intermittent discharges of pus from the uterine cavity, those cases in which the patients give a report of more or less frequently recurring "ruptures" of "ulcers" or "abscesses"—"breaking" of them, as they sometimes say. Unquestionably these are cases of pyosalpinx in which the distal extremity of the tube has been closed by adhesions, whilst the uterine end is yet not sufficiently occluded to bear the strain of accumulating pus. In my experience, a goodly number of these cases can be successfully treated in the manner indicated, in combination with other conservative measures that might be dwelt upon. Of course, when much disorganization is present, or a series of cavities has formed, or when the ovary itself is diseased to the extent of disorganization, no reliance should or can be placed upon the procedure now under consideration. What I wish mostly to urge is this: That the Fallopian tubes are far more frequently amenable to catheterization than is generally supposed, and that therefore, in the light of modern therapeutics, a persevering and intelligent study of the subject will do much to remove one of the opprobria of medical art and add laurels to truly scientific conservatism.

For the Pains of Chronic Rheumatism.—

℞.—Acid. arseniosi . . .	gr. iij.
Pulv. guaiaci	ʒiij.
Pulv. capsici	ʒss.
Pulv. aloes et asafœtidæ . .	ʒiij.—M.

Ft. pil. no. cxx.

S.—One thrice daily.

The Practitioner.

TWENTY-EIGHT CASES OF DIPHTHERIA, WITH ELEVEN DEATHS, DUE TO AN INFECTED MILK-SUPPLY.

BY FRED. B. APPLEGET,
SPECIAL HEALTH-INSPECTOR, OF HIGHTSTOWN, N. J.

THE epidemic of diphtheria that appeared in Hightstown, N. J., in July, 1893, was, in many respects, a remarkable one. From its suddenness, its virulence, and the quickness with which it abated, it has excited widespread interest, and has been deemed especially noteworthy as a signal case of the spreading of disease through the medium of milk, and of the immediate and almost complete extinction of the epidemic by cutting off the infected supply. Hightstown is a village of some 2000 inhabitants, and lies in one of the most healthful parts of Mercer County. There had been occasional cases of mild diphtheria in the town during the year, and one death from the disease on June 17th, but the first case of the epidemic in question appeared on July 18th, the patient being a young boy of fifteen years. Other cases appeared almost simultaneously, and at the end of the week a total of twenty-eight patients had been reported. Of these six died. The first two deaths occurred on the 22d, one of them being the boy first attacked. One death followed on the 23d, one on the 24th, and one on the 25th. In the next week two deaths occurred on the 26th, one on the 28th, one on the 29th, and one on the 30th. One other victim of the epidemic was an infant, whose parents took it to Eatontown on the 17th, to escape the disease, but who sickened, and died on the 28th. The total number of deaths was eleven, all of them being among the patients stricken in the first week of the epidemic. Outside of those who were prostrated by the disease in that period there have been but seven cases reported, all being persons known to have been directly subjected to contagion from original cases.

The fatality was in the main among children, the oldest person that died being a young lady of nineteen years, the youngest a babe of fifteen months. The average age in the fatal cases was about eight years.

On the 25th the attention of the local Board of Health was first called to the fact that there was a striking coincidence between the course of the epidemic and the milk-route of one dairyman, but no action was taken in the matter until Dr. G. Clark Hunt, Inspector of the State Board of Health, visited the town on the following day. Investigation showed that, although the people of the town bought milk from six different dairymen, every case of diphtheria reported was in a family that used the suspected milk. In one instance, in which the adults of a family used this milk, and the children drank milk from another dairy, two of the adults had diphtheria, while the children were perfectly well. The sanitary condition of the town while not perfect, was found to be very good, and the cases were almost all in the most cleanly families, had sprung up in the healthiest parts of the town, and were widely scattered. In the opinion of Inspector Hunt the milk-route was the only possible connection between them, and he immediately ordered that further sale of the milk be prohibited. Developments have proved that his theory was correct, and all the local physicians are positive in their belief that the milk undoubtedly was the source of the epidemic.

Further investigation disclosed the fact that a German boy who washed cans and did the milking at the dairy in question had on the 22d called on a local physician, who found the boy's throat covered with membranous patches. He pronounced the case diphtheria. The boy had been ailing for several days, and it is supposed that while at work he contaminated the milk, and that in this congenial soil the germs rapidly multiplied and infected the entire supply. An additional fact that strengthens the theory is that of the only two other cases known out of the village, one was the daughter of the dairyman and the other his niece, a neighbor.

A striking feature of the case is that the sick boy, who is supposed to have caused the epidemic, was not seriously ill at any time. When the doctor examined him his tonsils were covered with pseudo-membrane, but it soon disappeared after a little treatment, and he was not confined to his bed at all. It, therefore, appears that this most malignant epidemic originated in a case of "walking diphtheria." Naturally, there are theories that the milk was infected by diseased cows or unwholesome food given them, but the herd has been pronounced by experts to be in fine condition at present, and there is little doubt that the disease came from the boy.

As regards the individual cases, the disease does not seem to have had any features to distinguish it from other epidemics of malignant diphtheria, beyond its remarkable virulence and the slowness with which the patients recovered. In fatal cases the longest time of sickness was seven days, and the average was about four. In most of the patients the disease first manifested itself by nausea, pains in the limbs and head, and high temperature. Then followed the appearance of the diphtheric membrane, in many cases covering not only the tonsils, but also the roof of the mouth and the nares. In almost every instance death was caused by toxemia, although there were several cases of asphyxia. When the disease resulted fatally, death was generally preceded by a deceptive rallying of the patient, and several who, only a few hours before were thought to be recov-

ering, died suddenly. Convalescence was remarkably tedious, the patients giving evidence of great loss of vitality. In the few cases caused by contagion the disease assumed a very mild form. At present there are no serious cases.

CLINICAL MEMORANDA.

THERAPEUTIC NOTES.

By SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC.

IV.

Levulose in Diabetes.—Attracted by the favorable reports of German observers, I have for more than a year been administering levulose to diabetic patients. I shall elsewhere publish a detailed report of my observations. In these notes it will suffice to say that in nine cases, including different types of the affection, I have found that levulose may be administered in moderate quantities to diabetic patients without increasing the excretion of sugar or of acetone in the urine; and in some cases with a diminution of the quantity of sugar excreted. For example, to a patient who had for some time been excreting about four ounces of dextrose daily, one or two ounces of levulose were given daily for three weeks, and the excretion of dextrose fell to less than three ounces. Diminution of thirst and gain in weight were concomitantly observed. In cases attended with emaciation, the substance should be administered in quantities to be determined according to the amount of sugar excreted, and the influence exerted upon the nutrition, as shown by the body-weight. In other cases it may be used as a sweetening agent. The greatest drawback to its use is its comparative costliness; the commercial product, to which unfortunately a trademark name has been attached by the proprietors, retailing at present for about three dollars a pound. This, however, is a great reduction from the cost of levulose when Kuelz first advised its use twenty years ago. One hundred dollars a pound was prohibitory.

Strontium Bromid is one of the newer drugs that has held its place. I have used it constantly for nearly two years, and find it to deserve the encomiums of the French observers who reintroduced it into medicine. In a few instances in which I failed to specify the imported salt, patients complained that the medicine produced nausea and gastric pain. On dispensing the pure drug from a quantity obtained by myself from the manufacturers' agents, the complaint was not repeated. It is necessary, therefore, to specify a preparation known to be pure; and after using a number of brands, I have returned to that made in Paris, and with which the experiments of Paul, See, and others, and my own first observations were conducted. I usually give the drug in solution according to the following formula, known in the House Pharmacopeia of the Philadelphia Polyclinic as "mistura strontii bromidi composita":

Strontium bromid, pure, .	1½ ounces.
Glycerin	2 fluidounces.
Infusion of gentian . .	10 fluidounces.

Dose—From two to four fluidrams (fifteen to thirty grains of strontium bromid) before meals.

Strontium, one of the chemic group termed "alkaline earths," appears to have a special action upon the gastric mucous membrane. It increases appetite, promotes digestion, and favors nutrition. It is a distinct sedative in the case of irritability of the stomach.

In cases of chronic gastric catarrh, with a tendency to vomiting, in the nausea and vomiting of alcoholism, and in the indigestion of pulmonary tuberculosis, strontium has been more than ordinarily useful. In gastro-duodenal catarrh, and in intestinal indigestion of painful type, I have given it with some pancreatic preparation, one and a half or two hours after meals. Thus: Liquor pancreaticus, 2 fluidrams; strontium bromid, 15 grains; water, 2 fluidrams. I have likewise employed it with great benefit as an alkaline medicament in the treatment of lithemia. Its sedative effect as a bromid was especially marked in one case of lithemic dyspepsia associated with glycosuria, in which persistent insomnia had led to a distressing sulfonal-habit. By using it in doses of thirty grains during the day, and giving one or two doses of sixty grains at night, with occasional additional resort to hyoscin hydrobromate, the sulfonal-habit was broken up; and as general improvement took place, the insomnia disappeared, and the doses of strontium bromid were reduced. As a bromid, when the drug is to be employed for prolonged periods and in full dosage, the strontium salt is to be preferred in most cases to the potassium or the sodium salt, as it interferes less with nutrition.

I have observed good effects in epilepsy from the conjoint use of calcium and strontium bromids. I have elsewhere reported in some detail my personal observations of the beneficial action of strontium bromid in diabetes and the glycosuria of lithemia. I have found it useful in nephritis of the gouty type, and in the albuminuria associated with lithuria and oxaluria; in three cases of other varieties of nephritis and albuminuria I have used it faithfully, but without appreciable result.

Strontium Lactate has been advised for many kinds of gastric disturbance. I have employed it alternately with the bromid, in combination with the bromid, and alone in some cases in which I did not wish to give any bromid. It has not seemed to me to be fully equal to the bromid in gastric or lithemic cases. I have not used it in diabetes or neurotic cases. In nephritis it failed in the same cases wherein the bromid failed.

Strontium Iodid has been well borne in a few cases of asthma and of syphilis in which sodium iodid, potassium iodid, and hydriodic acid produced unpleasant effects. It failed to be tolerated in one case in which hydriodic acid was afterward successfully employed.

Strontium Benzoate, Strontium Acetate, and Strontium Salicylate should theoretically be useful, but I have not been able to obtain these salts for clinical study.

Sulfonal.—While it is now well recognized that sulfonal occasionally produces unpleasant symptoms, yet the sulfonal-habit and the bad effects of that habit have not as yet received the full attention that they merit. My own experience with the unpleasant effects of sulfonal is limited to three cases; though I have seen other cases in which I suspected sulfonal to be one of

the morbid factors, but could not ascribe any definite symptoms to it. Theoretically, any drug capable of the therapeutic and toxic effects known to be produced by sulfonal should be dangerous if its use be long-continued.

The first case, elsewhere reported, was that of a man slowly dying with pulmonary tuberculosis, in whom sulfonal, given as a hypnotic, produced, instead of quiet sleep, a "fighting delirium." The second case was that of the man alluded to in the note on strontium bromid. He had been taking from fifteen to thirty grains of sulfonal nightly for nearly two years. He professed himself to be unable to sleep without it. His urine was irregular in quantity, but, as a rule, scanty, high-colored, containing urates and phosphates in excess, uric acid, and occasionally sugar. He complained of great pain in the lumbar region; but was principally distressed by mental symptoms, irritability of temper, headache, confusion of ideas, and loss of memory. He had originally been given sulfonal by his physician for loss of sleep during the excitement of a political campaign; and had continued using it on his own responsibility. It is true that the complications of the case prevent an unqualified affirmation as to the part played by the causative action of any one pathogenetic factor, but a careful study of the patient and of the effect of remedies, convinced me that the scantiness of the renal secretion and a part of the mental failure were to be attributed to the long-continued influence of sulfonal.

The third case was that of a highly neurotic woman with pulmonary tuberculosis, who had been using sulfonal in doses of from ten to thirty grains at irregular intervals for an indefinite number of years—probably from the time of its first introduction. Whenever she had headache or whenever she failed to sleep soon after going to bed, she would take a powder. In this case also, without any evidence of nephritis, there was marked failure and irregularity of renal activity. The patient was querulous, forgetful, untruthful, confused, semi-delirious, the subject of delusions, and finally delirious, stuporous, and comatose. Here, too, there was difficulty in separating the symptoms of the disease and its complications from those due to the sulfonal-habit, but a study of all of the circumstances impressed me with the conviction that sulfonal was largely responsible for the distressing symptoms attending the close of this sufferer's life.

A fourth case may be cited as illustrative of a large number in which the evidence was less clear than in those previously mentioned. The patient was a "sexual hypochondriac," with lithemic symptoms and much-disturbed mentality. He had been using sulfonal for eighteen months, and likewise professed inability to sleep without it. The urine would be scanty for days, then profuse, light-colored, and of low specific gravity. He seemed better for a while after withdrawal of the sulfonal, but like most patients of his class became dissatisfied, and when last heard of was under the care of the fourth physician whom he had consulted in six months.

Dr. John W. Branham, a surgeon in the United States Marine-Hospital Service, died on August 19th of yellow fever, at Brunswick, Ga., whither he had been detailed for the purpose of suppressing a local outbreak of the disease.

DOES PHENACETIN POSSESS CONVULSIVANT PROPERTIES?

BY H. ILLOWAY, M.D.,
OF CINCINNATI, O.

CAN phenacetin cause convulsions?

CASE I.—July 30th, 1892, I was called to see E. S., a girl, eighteen years old, well developed and rather corpulent. She is a native of Russia, and has been in this country about a year. For some months after her arrival here she was troubled with amenorrhea. She is now employed in a cloak-making establishment and works very hard. In the afternoon of the day mentioned she was seized with a very severe headache and went home. I saw her at 5 P.M. She complained of intense headache; her cheeks were somewhat flushed; her tongue was very much coated; the thermometer in the axilla indicated a temperature of 101° F. I prescribed one powder of phenacetin, gr. v, to be taken as soon as obtained. About 7.30 P.M., I was summoned in haste to the patient. She had had a violent convulsion. Whilst I was talking to her she had another convulsive seizure; it was a well-defined, typical, hystero-epileptic convulsion. I prescribed tincture of valerian in ʒss doses and ordered a large clyster with milk of asafetida. The spasms recurred at short intervals and I endeavored to arrest them by pressure over the ovaries. This maneuver was successful to the extent that each individual spasm was cut short. As soon as she felt a seizure coming on, she would cry out, "Hold me, or press tighter," referring to the abdominal pressure.

Finally after several doses of valerian had been taken and the enema had acted several times, the spasms ceased about 11 P.M. To prevent a recurrence of the attacks I directed a dose of chloral hydrate.

The next morning I learned that there had been no recurrence of the convulsions after I had left. She was very much prostrated, and I sent her to the Jewish Hospital, where she remained four weeks, with no particular ailment—only great weakness. An examination there disclosed an infantile uterus.

I have since learned that she had had convulsions some years previously, though of what character I could not determine.

CASE II.—On August 3, 1892, I was called to see Mrs. T., thirty years of age, five feet in height, fairly well developed, the mother of three children born with easy labors. My visit was made nine days after confinement, the woman having been up and about from the seventh day. She complained of feeling badly; she had chills, with numbness of the tips of the fingers, coldness of the feet, and an uncomfortable feeling about the head. She had a languid, weary expression; her tongue was coated with a white fur; the appetite was abolished; she had some tremor, and a temperature of 101½° F. I prescribed:

℞.—Quininæ sulphat. . . . . grs. ijss.
Extr. gentian. . . . . gr. j.
Pulv. piper. nigr. . . . . grs. ij.
Solut. Fowleri . . . . . gtta. ij.
M. ft. mass. et ft. pilul. no. j. Dispens. tal. pilul. no. x.
Sig.—1 pill ter in hora.

Next morning, about 9 o'clock, I visited her upon call.

She complained of violent headache; the temperature was 101° F., and she felt generally bad. I prescribed:

℞.—Phenacetin. . . . . gr. v.
Caffein. . . . . gr. j.
M. ft. pulv. no. j; to be taken at once.

At her request I promised to return at 11 A.M., at which hour she complained of feeling bad. Whilst I was talking to the nurse, making some inquiries about the bowels, urine, etc., she got out of bed and walked toward me, with her hands held in front of her, like a person walking in the dark, and complained that she could not see and that she felt frightful. We had no more than put her back into bed when she was seized with a very severe, typical hystero-epileptic convulsion of considerable duration. As soon as she recovered therefrom she passed a quart or more of urine very pale in color and light in specific gravity. Potassium bromid in large doses was administered. Two further seizures of equal severity followed in rapid succession. After this there was no recurrence. For six weeks after this Mrs. S. was not well, suffering from indefinable feelings in her head which produced great mental depression, almost melancholia, insomnia, etc. Gradually, however, she made a perfect recovery. I learned later that on the eighth day after her confinement, at the circumcision of the little boy, something had occurred that had agitated her greatly and had set her in fear of the occurrence of something untoward

Studying these cases subsequently the question naturally presented itself: "Was the spasmodic seizure in these two cases due to the phenacetin, or was the administration of this remedy only an incident in the history of the cases, with no part in the causation of the convulsive phenomena?"

Taking into consideration the well-established fact that phenacetin is almost innocuous, and that it can be, and is, administered in much larger doses without producing untoward effects, the latter view might be taken, it being assumed that all the necessary conditions for the development of a convulsive seizure were already present at the time of the administration of the drug, and that this would have occurred even if the medicine had not been given. This would be a very plausible explanation if we had but Case I, in which we have a history of the occurrence of convulsions at some previous time, to contend with; but we have also Case II, and here we have no history of convulsions at any antecedent period; furthermore, I have known the lady for nine years, and never, to my knowledge, did she manifest any symptom of hysteria or spasm. In this case we certainly have no grounds upon which to base the assumption of the existence of the conditions necessary to the development of a hystero-epileptic attack prior to the administration of the phenacetin.

A scrutiny of the two histories discloses the following points of similarity:

I. Elevation of temperature.

II. Intense headache.

III. Administration of five grains of phenacetin and the development two hours thereafter of an hystero-epileptic spasm.

IV. Marked physical prostration and mental depression following the attack and continuing for some time.

Taking all the facts, here set forth, in consideration, the conclusion seems inevitable that the phenacetin was the active agent in the causation of the convulsions.

If this conclusion be correct, what was the *modus operandi*? In experimental investigations with antipyrin and resorcin, substances belonging, with phenacetin, to the same chemical group—"carbon compounds of the aromatic series,"—convulsive phenomena were developed in the trial-animals,[1] and with resorcin in man.[2] It is thus established that in sufficiently large doses, this group of chemical agents may act as convulsivants. Now, it does not appear far-fetched to assume that under certain circumstances a state of the system is developed in which even the very mildest of this category of compounds, the most innocuous, even if given in small doses, may act as a toxic agent and cause convulsions. Such an assumption is fully justified by the accumulated experience with other and various powerful agents of the Pharmacopeia.

There is, however, another explanation possible. The rapid lowering of the temperature by phenacetin may have been the cause of the accumulation in the cerebral centers of a surplus of nervous irritability, and as the result of this accumulation a nervous explosion, a convulsion, ensued.

It is true that no facts, even remote, can be cited in support of this hypothesis; nevertheless it merits consideration upon the following ground: It is a well-established fact that the onset of a febrile movement is usually marked by a chill or a rigor, which is undoubtedly due to disturbance of the nervous equilibrium; furthermore, in very young children we frequently have convulsive seizures taking the place of the chill or rigor. Now, reasoning by analogy, it can be rather readily supposed that just as well as a sudden elevation of temperature may be attended with marked nervous disturbance, so may also a rapid and forcible depression of the temperature be attended with sufficient nervous disturbance to result, under certain circumstances, in convulsions.

MEDICAL PROGRESS.

A Foreign Body in the Nose for Twenty-seven Years.—Waring (*British Medical Journal*, No. 1698, p. 117) has reported the case of a woman, thirty-one years old, who presented herself for nasal obstruction and a discharge from the left nostril, following upon an attack of influenza two and one-half years previously. The discharge, at first watery, later became thicker and yellowish, with an extremely offensive odor. There was no evidence of organic disease and none of syphilis or tuberculosis. Upon examination in strong sunlight the nasal cavity presented an appearance of decaying or necrosing mucous membrane, with yellow and gray sloughy patches, and indications of hyperemia. The opening was blocked by this conglomerate of decaying material and reddened vascular membrane. On passing a probe into the cavity a grating sensation was felt on the outer side and also posteriorly, and the further

[1] Baumann u. Preusse: Archiv f. Anatom. u. Physiolog., 1877.
[2] Maragliano: Centralblatt für die medic. Wissenschaft, 1884.

passage of the probe toward the pharynx was obstructed. By means of straight serrated forceps small spicules of dead bone and sloughing tissue were removed piecemeal from the outer side and floor of the cavity, as well as several polypoid growths of somewhat firmer consistence than clotted blood. Almost in a line directly backward and situated above and about the posterior nares was a movable mass that felt like dead bone. With some difficulty and manipulation this mass was grasped by the forceps and forcibly withdrawn through the left nostril. It was oval in shape, about as large as a filbert, and presented an irregular, gritty surface. On being broken up it was found to have for its nucleus a cherry-stone in perfect condition, around which was encrusted a layer of calcareous matter one-third of an inch thick, the whole mass measuring one inch in its longest diameter. A good deal of bleeding followed, but was controlled by irrigation with a solution of tannic acid. On inquiry, it was learned that at the age of four years the patient had introduced three or four cherry-seeds into the nose, but no discomfort had been felt until after the attack of influenza.

The Use of Curved Skin-incisions.—BEALE (*Lancet*, No. 3645, p. 84) gives the following reasons for preferring curved to straight skin-incisions: Curved incisions heal more rapidly, because there is really but one edge to the wound (that belonging to the flap) that is movable; moreover, the flap having been stitched to the neighboring skin or held away from the seat of operation, both edges of the wound are quite uninjured when the sutures are to be introduced. The resulting scar is smaller, although this is only of importance in certain parts, for the skin may be incised obliquely in making a curved incision, so that the epidermis at the edge of the flap is slightly in advance of the true skin. The curved incision fully exposes the parts to be operated on (assuming that the base of the flap is twice or three times its length) and gives the operator plenty of room in which to work. Suture of the edges is easier than in the case of a straight incision, especially if the skin be pricked in one or two situations exactly opposite one another before the incision is made, and often the curved wound is adapted to the shape of the part better than a straight one. The resulting cicatrix is not over the seat of operation. Drainage is often most perfect by inserting a tube through an incision in the base of some part of the flap, thus giving no hindrance to the primary union of the incision, and preventing any possible discharge from infecting the edges. Incision through inflamed or diseased skin can be avoided, and yet the disease be easily reached. There need be no tension upon the edges of the wound, as a flap of skin is, so to speak, loose, and if there is fear of tension, a thick silk suture may be passed through the base or some part of the flap and out again, and then through the skin on the opposite side of the incision, and there fixed, thus avoiding a long suture beneath either flap edge of the wound.

Acute Nephritis after Vaccination.—PERL (*Berliner klin. Wochenschr.*, No. 28, 1893, p. 674) has reported the case of a child, two and three-quarters years old, which was vaccinated for the first time. The child had been rachitic, slow in learning to walk, and had suffered a good deal with eczema, but at the time of the operation it was in perfect health and well nourished. Four days later the little one became restless, complaining of pains in the abdomen and back and appearing feverish. On the following day vesicles were visible at the site of vaccination. It was also noticed that the urine was scanty, turbid, brownish, and deposited a heavy sediment. On examination, its specific gravity was found to be 1016, and albumin in the proportion of ½ per cent. was detected, together with blood coloring-matter. Microscopic examination disclosed the presence of red and colorless blood-corpuscles and numerous hyaline, epithelial, and blood tube-casts. With rest in bed and a milk-diet these manifestations disappeared in the course of a week, and the child recovered perfectly. The vaccination pursued its usual course. Three other children that were vaccinated at the same time presented no abnormal manifestations.

Migraine with Recurrent Palsy of the Third Nerve.—At a a recent meeting of the Ophthalmological Society of the United Kingdom, SNELL (*British Medical Journal*, No. 1698, p. 118) reported two cases in which attacks of migraine were attended with paralysis of the third nerve. One case was in a man, twenty-seven years old, who had had attacks of migraine from the age of ten years, during the last seven of which the eye had been closed in the attacks. These occurred at first at intervals of about eight weeks, but subsequently every two or three weeks, and lasted three or four days. The palsy of the third nerve was practically complete, there being ptosis and paralysis of the ocular muscles, including dilatation of the pupil and palsy of accommodation. The attacks commenced with vomiting and headache. In the intervals between attacks the ocular palsy did not entirely disappear, the drooping of the lid growing progressively more nearly permanent. The second case was in a girl, eighteen years old, in which two attacks of palsy occurred at interval of four years, though outbreaks of migraine in the interval. On each occasion recovery was perfect. The affection is always to be monocular. The rapidity of recovery seems to bear an inverse ratio to the length of the interval.

The Administration of Anesthetics.—The following deductions (*Lancet*, No. 3642, p. 1498) have been arrived at by the Commission appointed by the *Lancet* to investigate from a clinical standpoint the subject of the administration of chloroform and other anesthetics: The death-rate under anesthetics has heretofore been unduly high, and may be lowered by improved methods and greater care. Ether is the safest anesthetic in temperate climes for general surgery, when properly given from an inhaler permitting graduation of the strength of the vapor. Nitrous oxid gas should be employed for minor surgery, and should replace chloroform in dental surgery. Chloroform is a comparatively safe body when given by a carefully trained person, but is not in any case wholly devoid of risk. No age or nation is free from danger under anesthetics. The perils of anesthesia, however slight, demand that the undivided attention of a duly qualified and trained medical man should be given to the administration of the anesthetic.

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PHLEGMONOUS PROCESSES ASSOCIATED WITH THE PRODUCTION OF GAS.

IT seems at first rather surprising that in view of the well-established facts connected with the bacteriology of the suppurative inflammations, surgeons should have remained ignorant of, and comparatively indifferent to, the nature of those destructive phlegmonous processes associated with the evolution of gas in the tissues. Fortunately, these "septic phlegmons," since the advent of the newer surgical technique, are among the rarer accidents that befall wounds; but despite this fact, the names Spreading Gangrene, Acute Emphysematous Gangrene, and *Gangrène foudroyante* (of MAISSONNEUVE) have by no means yet lost all their terrors.

On reviewing the literature it will be found that general credence has been given to the idea that phlegmons of this sort are dependent for their origin on particularly virulent varieties of the ordinary pyogenic bacteria, especially of the streptococcus pyogenes, and v. WINIWARTER has with some emphasis asserted that "no sharp line can be drawn between the diffuse suppurative and the diffuse septic phlegmons." As a matter of fact, when the tissues in cases of emphysematous gangrene were examined for bacteria, bacilli were always found, sometimes alone, sometimes associated with cocci, but these were almost invariably regarded as saprophytes, or bacteria of putrefaction, and looked upon as accidental contaminations of streptococcus-pus, in which they had found a suitable medium for saprophytic development (v. WINIWARTER, STIERLIN).

EUGENE FRAENKEL,[1] of Hamburg, has recently gone over this whole subject, and, through his bacteriologic investigations, has done much to clear up our knowledge of these processes, and to direct the further study of them along definite lines. He believes, and has, we think, proved that these gas-phlegmons possess a distinctive etiology quite independent of the suppurative inflammations, and calls attention to clinical evidence which alone seems almost convincing when once pointed out. The diffuse suppurative inflammations run their course with necrosis and pus-formation from the start; the diffuse "septic phlegmons" are associated with gas-development, and with softening and disintegration of the tissues. While the former may continue throughout without gas-formation, the latter, on the other hand, may lead to death without the slightest evidence of suppuration, although, as might have been expected, and as has now been demonstrated by cultural methods, *mixed* infections occur in which the development of gas may complicate a suppurative inflammation, or in which a secondary pyogenic infection may be superimposed upon a gas-phlegmon. The tardy appreciation of these conceptions of emphysematous gangrene is no doubt attributable to the deficiencies in the earlier bacteriologic methods, for the bacilli seen in the tissues and exudate could not be grown or isolated in pure culture, and so the application of the crucial test of inoculation-experiments remained impossible. After the introduction of the simpler methods of growing anaërobic bacteria, it became possible for these investigations to be more fruitful.

The idea of a separate etiology for the gas-phlegmons is by no means original with FRAENKEL, and he himself, in his monograph, refers to numerous attempts by others to settle the question. ROSENBACH observed two well-marked cases in which death occurred from gangrenous emphysema, one within six hours after an injury to the thigh, the other four days after an axillary operation. He saw what he called "emphysema-bacilli" in cover-slip preparations, but could not grow them. ARLOING described

[1] Ueber Gasphlegmonen. Hamburg and Leipzig, Leopold Voss, 1893. Pp. 1–56. 3 chromolith. pl.

a gaseous panophthalmitis following injury, from which he isolated a bacillus resembling the *vibrion septique*, and in 1891 LEVY (*Deut. Zeitschr. f. Chir.*, xxxii), from a pelvic abscess which contained gas, isolated, besides streptococci, a short, fine, non-motile bacillus. WILLIAM KOCH (*Deutsche Chirurg.*, Lief. 9) records seven cases, from one of which he claims to have isolated a bacillus identical in cultural properties and in pathogenic effects on animals with the bacillus of "symptomatic anthrax" (*Rauschbrand*), and calls the disease *Rauschbrand des Menschen*, but according to KITASATO and others, who have worked with this bacillus, his results must be doubted.

The careful bacteriologic examinations of WICKLEIN (*Virch. Archiv*, Bd. cxxv) are worthy of mention. From three cases he was able to separate a bacillus which resembled that of malignant edema, but which showed some points of difference from it. His experiments on animals were, however, almost entirely negative, only two guinea-pigs showing any disturbance after inoculation, and that only slight and temporary. CHIARI (*Prager med. Woch.*, 1893, No. 1) has described a fatal case of "septic emphysema" in a diabetic woman. He made both aërobic and anaërobic cultures, and separated the bacillus coli communis in pure culture. His experiments on animals were, however, negative, and it seems not unlikely that CHIARI had to deal with a mixed infection with the bacillus coli and a gas-producing bacillus, and that the latter was overlooked in working out the cultures.

FRAENKEL, to whose results we wish to call particular attention here, has had the opportunity of examining bacteriologically four cases of gas-phlegmon, two of them, indeed, following hypodermatic injections. From all of these he demonstrated on cover-slips, and was able to isolate by anaërobic plate-methods in pure culture, a short, plump, non-motile bacillus, with rounded ends, which stained well with all the ordinary bacterial dyes, and to which he has given the name *bacillus phlegmonis emphysematosa*. In one case this bacillus alone was found in the tissues; in a second it was associated with the yellow staphylococcus; and in the other two instances with the streptococcus pyogenes. He experimented on animals with pure cultures of the bacillus, and with mixtures of this bacillus with the ordinary pyogenic bacteria, in order to approach as nearly as possible to the mixed infections in the human being. Mice and rabbits were found to be insusceptible, but subcutaneous inoculation of guinea-pigs gave rise to a definite disease-picture, running its course in a typical way, with the development of gas in the subcutaneous and intermuscular tissues, accompanied by softening and disintegration of the muscles, and the outpouring of a hemorrhagic, dirty exudate. Some of the animals died with symptoms of severe constitutional disturbance; in others perforation of the skin ensued, with evacuation of the contents of the phlegmon, and final cure. Occasionally a peritonitis or pleuritis would be set up by extension. The "mixed infections" were more severe in guinea-pigs than the processes resulting from inoculation of the bacilli alone. The results of the histologic examination of the tissues of the animals experimented upon, and the relation of the bacteria to the tissue-lesions, we shall not speak of here. FRAENKEL differentiates his bacillus from the bacillus of *Rauschbrand*, the bacillus of malignant edema, and the "pseudo-edema bacillus" of LIBORIUS, but suggests that there may be several varieties of gas-bacilli, all capable of setting up emphysematous processes.

Without detracting at all from the value of these careful researches of FRAENKEL, it is necessary to direct attention to an oversight on his part, which becomes evident from his full description of the bacillus. The organism which he believes to have been before undescribed, has in reality been very fully studied in this country by WELCH and NUTTALL, and an epitome of their observations has already appeared in THE NEWS ("Pneumathæmia," Sept. 24, 1892, p. 357). A comparison of the original articles of the observers shows these two gas-producing bacilli to possess precisely similar cultural and morphologic properties, and there is every reason to believe that they are identical. The animal experiments were conducted differently, but so far as they were parallel their results agree. The bacillus of WELCH and NUTTALL, it will be remembered, was found in a patient suffering from aneurysm, in whom after death bubbles of gas were found in the heart and bloodvessels everywhere throughout the body. Not only on account of priority, but more by reason of its greater comprehensiveness, it would seem desirable therefore to retain for this gas-bacillus the name given it by WELCH, the *bacillus aërogenes capsulatus*.

The dangers lurking behind an ordinary hypodermatic puncture are well illustrated by two of the fatal cases of FRAENKEL, and it is interesting to note

that he succeeded in guinea-pigs in setting up a gas-phlegmon by simply contaminating a hypodermatic needle used for injection with a culture of the gas-bacillus.

Although Fraenkel has, in view of the anaërobic nature of the bacillus, suggested that long and free incisions which allow the oxygen of the air to come in contact with the affected tissues may be of service, and that this treatment may be supplemented by the use of certain oxidizing agents (*e. g.*, solutions of potassium permanganate or hydrogen dioxid), we should still feel inclined to hesitate in preferring these measures to the older and perhaps more heroic method of early amputation, which has so long been advocated by our best surgeons. When amputation is impossible, however, as in emphysematous phlegmons of the head and trunk, these suggestions may be adopted as the best means at our command.

MEDICINE AND CITY NOISES.

Not long since a foolish gentleman, who preferred to live in New York or not to live at all, committed suicide rather than to longer endure the ear-splitting noise of the bells of a neighboring church. In thousands of cases people are being made ill, are committing slow suicide, or are being painfully and slowly killed by useless city noises. Noise, then, becomes a question of health and of medical importance concerning which physicians should have a word to say and a duty to perform.

Scientifically, our rebellion against the noise-makers is founded upon the physiologic truth that rest is necessary to health, and that over-stimulation or persistent stimulation of any organ or of all organs is essentially pathogenic. Herbert Spencer secured for himself a sad sort of freedom from noise by a mechanical contrivance that held some kind of soft plugs or stoppers in the external auditory meatuses. If there were only some method whereby one could at will shut out unwelcome sound, as one can shut out the light from the eyes; if some aurist could devise an artificial method *à la* Spencer, one that would not injure the ear, he would be a great benefactor to humanity. The evil done the few people that would thereby possibly be burned to death or otherwise injured would be small, as compared with that of the many deaths and much sickness due to noise.

Sociologically, the whole community has an unrecognized duty as regards noise that rests upon a physiologic and esthetic basis. Delicacy and accuracy of response to a physiologic stimulus are the characteristic marks of perfection in an organism. Whatever prevents this is against the welfare of society and progress. In this brutal noise-making era, one of two things must follow the ceaseless bruising of the mind by noise. Either the auditory mechanism, and the nervous mechanism with which it is related—that is, the whole mind—must become blunted in sensitiveness, crushed and stupefied; or it must react pathologically. People are, therefore, divisible into two classes: those whose nervous systems and minds are becoming mechanicalized, anesthetic, and brutalized, and those who, thus failing to kill sense and mentality, develop disease-reactions. The distinct agency of noise is to make us either savage or sickly. Civilization, of which noise-making is a decided component, is thus bearing in its bosom a self-poison, to its own undoing. We are losing all refinement and delicacy of the senses and are reverting to the condition of the barbarian whose senses had to be pounded and whipped into reaction, or we are becoming neurotic, hysteric, and neurasthenic. Generally and progressively, "Society" is either a crowd of the mentally stupid or of the hyperesthetically morbid, and social amusement is becoming a game of battering and spurring jaded and blunted senses, or of ministering to sense-diseases.

In the narrowest sense, we are medically bound to reduce the amount of noise-making, not only because noise engenders disease, but also because it prevents the cure of disease, or aggravates disease, very often, indeed, is the immediate cause of death. In an American city like Philadelphia there are something like 3000 needless deaths, and the equivalent of 6000 years of needless illness each year. What proportion of this waste of life is due to noise, it is, of course, impossible to say, but certainly a considerable proportion is chargeable to it. The sick are in private houses scattered all through the city, or in hospitals that are often located in the most densely crowded portions. Every physician knows how necessary quietness is to the sick, and how often noise has been the last baneful influence that the weakened organism could not resist, and thus the controlling and distinctive cause of failure to cure.

The recklessness of production and the unnecessariness of modern city noises are disgustingly astonishing. The worst of it is that they are even

kept up throughout the night. If the night, at least, were kept quiet, and the organism were thus given periods of repose, it would not be so impossible to preserve normality of sense-reaction and sanity of mental reaction. In Philadelphia one or a dozen drunken brawlers may make the night hideous with howl and curse and obscenity. Remonstrance with the policeman elicits a smile, with ill-concealed contempt for the remonstrant as a crank, and the avowal that he has no authority to interfere. In Philadelphia it is illegal for locomotive-engineers to blow whistles, and yet all night long sleep, at least in summer, is to healthy ears and minds impossible by reason of this ear-splitting curse. Street-car bells rung all the time (by horses or by wheels) are no protection to the public, and yet the public submits to the horrible nuisance. The laying of railway-tracks and the paving of streets at night are only necessary for the advantage and profit of mercenary corporations, and yet the authorities have no power, or do not assert it, to repress the evil. If our freedom-loving American submits to the dictation of his tyrant and master as to trolley-cars, his master puts down the new tracks at night, with fiendish noises, and will by and by run the cars with the still more fiendish and ceaseless noises.

From whatever aspect the subject be considered it seems strange that people will submit to the indignities of the noise-makers. A thousand are outraged in order that one or a few may possibly be benefited. The shrieking of whistles and the ringing of bells to notify workmen to stop or to start work is an instance in point. Everybody has a watch or a clock at hand. Why, then, blow the whistles? Why, also, thunder or jangle bells to tell people that should be asleep what o'clock it is during the night? The 10 per cent. of people who go to church must be warned by bells; but have the 90 per cent. no rights who do not need or heed; and what about the sick? The milkman arouses a whole neighborhood in delivering a quart of milk. The cartmen, the peddlers, the hawkers, the ragmen, etc., bawl and howl to be heard half a mile away if some other greater noise near by did not drown their voices. There are persons that think it strange that barking dogs and crowing roosters in a city should be objected to.

All noises may be divided into the necessary, the partially necessary, and the wholly superfluous. The makers of the last class of noises should be proceeded against in the interests of the public health by all the forces and with all the vigor at the command of physicians. And this by all odds is the largest and most injurious class of noises. Here is a work ready for the Associations for the Public Good. There is something particularly exasperating and baneful in the unnecessary noise in the very fact of its unnecessariness. Let all the loafing rowdies, howlers, hawkers, whistle-blowers, bell-ringers, and the rest be incontinently hushed, and especially if they carry on their diabolism at night.

Concerning the class of partly preventable noises of cities, the greater amount of them is connected with street traffic, and here arises the shameful need of good smooth pavements. As with the strawberry, so it is with the asphalt pavement—doubtless a better one could have been or may be invented, but doubtless it never has been invented. It is incomprehensible that people should consent to endure the torment arising from the stone and boulder pavements, and seemingly designed, like African music, for creating the most intolerable clatter possible. In addition to this aspect of the question there is another reason why, as physicians, we should do away with block and cobble-stone pavement: they are excellent culture-grounds for lodging filth and disease-germs. The asphalt pavement offers no such a nidus and can be easily flushed and kept clean.

The degree and character of the civilization of a country are indicated by the amount of unnecessary noise it endures, and this is accurately gauged by the condition of the pavements of its cities.

THE PAN-AMERICAN MEDICAL CONGRESS.

DESPITE the fact that a large number of medical associations and societies have held their meetings within the past few months, an examination of the programs of the various sections of the Pan-American Medical Congress shows that the best papers have been held for the great gathering of the physicians of all America, to be held in Washington, September 5th, 6th, 7th, and 8th. It is evident that everyone who is not absolutely prevented will find it greatly to his advantage to attend. Patriotism unites with Medicine to make the event of extraordinary importance. The splendid programs give certain promise that the meeting is to be primarily scientific in character and that medicine is not to be an excuse for unlimited social diversion. The officers of the

Congress have long heroically labored to bring about the success that is now beyond all question assured. Let everyone determine to add the one thing that will make assurance doubly sure—that is, his daily presence at the meetings of the section of his choice.

EDITORIAL COMMENTS.

The Reform of Chemic Nomenclature must be gradual and moderate, and inconsistencies will have to be tolerated during the process; yet whenever a single step forward can be taken without risk, it should be taken. Thus the proposition to shorten *phosphorus* to *phosphor* might safely be adopted; and, despite its inconsistency, phosfor would be still better, even if the commendable change to fosfor have to be yet longer postponed. So, too, the terms *sulfic* acid and *sulfous* acid, *phosfic* acid and *phosfous* acid, are better than *sulphuric*, *phosphoric*, etc., and equally intelligible.

In addition to the shortening of chemic names, some approach to uniformity in the terminations of the names of similar substances is highly desirable. The recent multiplication of new products has in many cases destroyed a previously existing uniformity. Particularly is this so in the case of the *ins* and the *ines*. If the final *e* be dropped from the names of alkaloids, as seems advisable, the termination *in* should likewise be dropped from the names of all substances but alkaloids. In the case of one group of substances now bearing this termination, namely, the enzymes, an admirable substitute is at hand in *ase*, as now found in *diastase* and *invertase*. We should thus have *pepsase*, *trypsase*, *amylopsase*, *rennase*, and *steapsase*. In the case of substances now termed *metabolins*, *toxins*, and the like, the termination *it* or *a* could be employed; *anabolit* or *pneumotoxa* would be as euphonic and as manageable as *anabolin* or *pneumotoxin*. As to fanciful names of drugs, anti-(this)in and ex(that)in, their entire suppression would be no loss. Names somewhat indicative of chemic composition, and not too long for every-day use, can be found. In order to avoid confusion, however, the changes should be recommended by an authorized body, and we would suggest the appointment of a commission by the American Medical Association to take up the whole subject of chemic nomenclature in so far as it affects medicine (*i. e.*, physiology, pathology, and pharmacology), and to submit a well-considered scheme for shortening and rendering uniform the terms used.

Prostitution in India.—The British Parliament prohibited licensed prostitution in India, but the startling fact is out that the law remains a dead letter, and that the military authorities have continued to perpetuate the essential characteristics of the license system, on the ground that half-suppressed vice would be more harmful to the men than legalized prostitution. The *Woman's Herald* says that the investigation carried out by two American women proves that "the whole horrible system of regulation, registration, and compulsory examination of the unfortunate women is in full force," under the command of Lord Roberts and his officers. The *Indian Medical Gazette*, in the face of the sad and perplexing problem, claims that there is only one cure—marriage—and adds the following: "Recognizing the awful consequences of forced celibacy upon our soldiery, coupled with the debasing and wrecking results of its military substitute—licensed prostitution—physicians must boldly declare against the continuance of what is distinctly proved to be unsanitary and sinful. They must vote for what is healthful and right, and therefore ennobling physically, mentally, and morally. Remove the State provisions made for unbridled lust, and put in their place lawful marriage. If the upkeep of married soldiers and their families in India is costly, the cost of invaliding the hosts of venereal-stricken men is not a fraction less; it is probably more expensive."

We are by no means certain that this is best or that it is not best. The more profoundly and conscientiously one studies the problem, not only as to India, but as to every country and city, the more one is in distressing doubt as to what to advise. The purely sentimental view—that of women and of the Women's Christian Temperance Union—will certainly and more quickly lead to wretched depths of suffering and disaster than the license system, but ——.

The Infectious Nature of Acute Articular Rheumatism.—Analogy and the conceptions of modern pathology have long suggested an infectious origin for acute articular rheumatism, but the demonstration of such an etiology is yet wanting. An important contribution to this subject has just been made by Sahli (*Archiv für klin. Medicin*, Band li, Hefte 4 und 5, p. 451), of Berne, who, in a fatal case of acute articular rheumatism complicated by endocarditis, pericarditis, pleurisy, and pneumonia, succeeded in isolating from the affected joint, from the endocarditic vegetations, from the pericarditic and pleuritic deposits, from the enlarged bronchial glands, and from the blood, a microörganism corresponding in its morphologic characters with the staphylococcus pyogenes citreus, but not causing suppuration. Accepting the etiologic part played by this organism in the given case Sahli, raises the interesting question as to whether it is really a modified staphylococcus citreus or a distinct organism, himself leaning to the first view. The interesting proposition is also made that rheumatism may be caused by one of a number of organisms. In the case reported the evidence indicates that the endocardial, pericardial, and pleural inflammations were not true complications, but co-manifestations, with the joint-affection, of the localization of the causative agency of the primary disease.

The St. John Ambulance.—The Columbian Exposition, which is such an educator in many directions, is now able to exhibit a most admirable and complete ambulance service. The ambulance, which has just been secured through the energy of the head of the department, is a model for this country. It is the pattern well known in England as that of the St. John Ambulance Association. The strong, still-running wheels are surrounded by heavy rubber tires. The rear of the box opens by two doors, and a step comes down. A snap loosens a stretcher, which is drawn out on rollers; a second stretcher may be removed in the same manner.

When both stretchers are full, the first one is slid in on rollers and quickly raised on levers two and a half feet. The second stretcher is then run under it. Four injured men and two doctors can sit in the other half of the ambulance at the same time. The sides of the ambulance have each two large glass windows and curtains, with large manageable ventilators above the windows. The interior is lighted by electricity. This ambulance will easily and comfortably carry at one time the driver, two attendants, five injured persons sitting and two lying on stretchers. With this new ambulance the medical service at the Fair is complete.

A Scientific Investigation of the Poison of Rhus Toxicodendron Desirable.—THE NEWS of October 24, 1891, p. 484, and November 7, 1891, pp. 555. 556, contained a number of interesting communications concerning the toxic action of *rhus toxicodendron*, illustrating the remarkable property of this poison of transmission from person to person. Facts have lately come to our notice showing beyond question that the poison is often air-borne. There is a chance here for an interesting and valuable investigation to be made by some ambitious laboratory student or physician who has no personal idiosyncrasy as regards affection by the agent. The essential toxic principle should be isolated, its action on the human skin studied, and some therapeutic measure learned for the benefit of those poisoned. For certain persons the plant is harmless; to others it is a violent and persistent vesicant, the repetition and continuance of auto-infection by the affected serum being frequent, long, and violent. It is not impossible that the essential toxin might, under certain modifications, be proved to possess peculiar therapeutic power, and be a valuable addition to our materia medica.

Dying Declarations.—Physicians are frequently charged with dying declarations. The law governing their admissibility in evidence is well settled, says the Supreme Court of Alabama, in the case of Blackburn *v.* State, just reported (13 Southern Reporter, 274). Such declarations are not admissible unless they appear to have been made under a sense of certain and impending death. It is not what the court which passes upon their admissibility may believe the condition of the deceased was, for, although it may appear to the court, or to anyone capable of thinking rationally, that there was no possible hope of recovery, yet the question aside from that is, What was the state of the declarant's mind when the declarations were made? Did he appreciate the fatal character of his injury, and were his declarations uttered under the sense and solemnities of impending dissolution? If so, then, "when the death of the deceased is the subject of the charge, and the circumstances the subject of the dying declarations," they may be admitted in evidence; otherwise not.

Insanity from Jealousy or Revenge.—The heat of passion, and feeling produced by motives of anger, hatred, or revenge, is not insanity. The law holds the doer of the act, under such conditions, responsible for the crime, because a large share of homicides committed are occasioned by just such motives as these. If, however, there is any such thing as insanity produced by jealousy or revenge or wrath—genuine insanity, not mere turbulence of passion produced by desire for revenge; but if there is any genuine insanity, produced by any cause—then, says the Court of Appeals of New York, in the case of People *v.* Foy (34 Northeastern Reporter, 396), so far as affecting the prisoner, it is the same as any other kind of insanity.

REVIEWS.

DIE SYMPHYSEOTOMIE. Von PROF. DR. PAUL ZWEIFEL, Director der Universitäts-Frauenklinik in Leipzig. Nach einem in der medicinischen Gesellschaft zu Leipzig gehaltenen Vortrage. Leipzig, 1893.

SYMPHYSIOTOMY. By PROF. PAUL ZWEIFEL, M.D., Director of the University Obstetric Clinic, of Leipzig. A Report presented before the Medical Society of Leipzig, 1893. Small 8vo, pp. 79.

AFTER having had a remarkable success in the operation of Cesarean section, in which he has had as many as thirteen cases in order, with the loss of one child, but of no mother, Prof. Zweifel on September 27, 1892, took up that of symphysiotomy, since which date, up to April 27, 1893, a period of seven months, he had twelve operations without a death, and all of the children as far as reported were delivered alive. The first child died in two days; but nothing is said of a subsequent death in any of the other eleven. Prof. Zweifel, with his assistant, Dr. Döderlein, had eight Cesarean operations without a death last year; showing that he has made the pubic division a more frequent substitute for craniotomy. Of the twelve women, only one had the minimum *conjugata vera* of 2¾ inches, and the others varied from $3\frac{1}{16}$ to 3¼ inches. The children were in general of large size—from 19¼ inches to 21¾ inches long, and from 3200 to 3700 grams in weight; the bi-parietal diameters were from 3½ to 4 inches; the duration of labor was from seven to forty-eight hours, but only three extended beyond twenty-four hours. One woman had previously been subjected to the Cesarean section.

Case XII deserves special notice, as the woman, twenty-nine years old, had a double uterus and vagina, with the fetus developed in the right half of the organ. She had been eighteen hours in labor. The fetus was a male of medium size, born asphyxiated, but revived. The woman was 4 feet, $7\frac{5}{8}$ inches high, and had a generally contracted symmetric pelvis, with a conjugata diagonalis of 10.5 c.m.

Ten of the women were delivered by the forceps; the instruments of Tarnier and Naegeli being used; five by the high application, and four in the pelvic cavity, Prof. Zweifel having been very successful with symphysiotomy, as we have shown, is quite in favor of this method of delivery, which is now enduring the most severe trial that it has ever had to bear. It will require a test of several years before its true value can be established, as men are now divided in opinion, according to their measure of success, and this depends very much upon the care and patience exercised in drawing the fetus through the pelvis and soft parts. The chief danger is from sepsis, and this may come from the symphysis; or from lacerations made in delivery. There have now been thirty cases on this side of the Atlantic, with

four deaths: three operations in Canada, two in Brazil, and twenty-five in the United States.

Medical Pocket Atlases. Obstetrics. Part I, Labor, delineated in Ninety-eight Plates. By O. Schaeffer, M.D., Assistant at the University Frauenklinik in Munich. Translated and published under the supervision of J. Clifton Edgar, M.D., Adjunct Professor of Obstetrics in the University of the City of New York, etc. New York: L. Hydel, 1893.

In this small production the author attempts to depict in a series of ninety-eight colored plates the various fetal positions, normal and abnormal, together with the obstetric operations devised to correct the latter. As far as he goes he has been fairly successful in his aim, and most of the plates illustrate what they were intended to show. There are some grave defects, however, that cannot be overlooked. In the first place, the series of plates is by no means complete, and it cannot be claimed that "labor" has been fully delineated. The valuable dilating function of the bag of waters has been largely slurred; the *successive* stages of the various positions are not presented; the posterior brow-position is entirely omitted; the Schatz method of external version in face-presentation is but poorly depicted; the high position of the contraction-ring, the most serious complication in impacted shoulder-presentation, is not shown at all; and while the methods of version and the application of the forceps are presented, there are no illustrations of the several operations in embryotomy. Teaching by pictures is a valuable method of imparting knowledge, and the undoubted intrinsic value of this Atlas could be materially increased by an observance of the suggestions offered.

Sulla Origines dei Corpuscoli del Sangue. Ricerches del Dott. Vincenzio Allara. Milano: C. Chiesa e F. Guindani, 1893.

This new contribution to a study already rendered famous by Bizzozero, displays great boldness and originality of reasoning, with much interesting, though vague, research—vague, we mean, as regards the details, but explicit enough in other ways. The author proceeds critically rather than experimentally.

On the subject of the origin of the blood-corpuscles, his views may be summarized as follows: The white corpuscles arise from what he terms "mucous cells," or "cellule mucori." The "cellule mucori" are produced in the deep layer of the epithelium of the digestive canal, where they are held during their incubation (incubazione). The digestive canal (tubo digesente) preserves this function throughout embryonic and adult life.

Again, in the embryo tiny vesicles in the ciliated meshes that surround the vesicle of the allantois, which "now acquire a new significance, physiologically speaking, which is that from the epithelium therein arise the 'mucous cells' (or cellule mucore), and from these the large variety of the leukocytes of the blood and lymph. The origin of the white corpuscles of the blood and lymphatics is, therefore, not in the mesoderm, but, in truth, in the internal fold of the blastoderm.

We cordially recommend this book, which, in spite of some very obvious confusion, in spite of some lack of method, is a truly ingenious and original effort.

The Recrudescence of Leprosy and its Causation. A Popular Treatise. By William Tebb. 8vo, pp. 412. London: Sloan, Sonnenschein & Co., 1893.

The author, who has both travelled much in countries where leprosy is found and has read extensively the literature of the subject, calls attention in this volume to the danger of inoculation of this disease through vaccination. He is a strong opponent to vaccination, stating in the preface that "for nearly a century Jenner's prescription has been tried and found wanting." With this as the key-note to the book, the medical man knows what to expect in the succeeding pages. At the same time the subject is treated from a practical standpoint, the statements being supported by references from high authorities in this disease from all countries. Numerous cases and much evidence in favor of the author's theory, as well as on other points, are brought forward, with the conclusion that the disease is not contagious in the ordinary sense of this word; that it is inoculable; that the most frequent opportunities of inoculating the disease are found in vaccination, and that this is a true cause of the spread of the disease; that the increase of leprosy in the Sandwich Islands and elsewhere has followed *pari passu* with the introduction and extension of vaccination, and that there is great danger of extending the disease by arm-to-arm vaccination.

Electro-Therapeutics of Neurasthenia. By W. F. Robinson, M.D. (Physician's Leisure Library.) Detroit: George S. Davis, 1893.

The author, following Dana, adopts a clinical classification, making such divisions as neurasthenia of adolescence, climacteric neurasthenia, that following acute disease, nervous shock, etc. A decided preference is shown for the static current; twenty-two pages are devoted to it, sixteen to galvanism, and six to faradism. The author advocates large contact-electrodes for galvanism, moistened in a solution of sodium bicarbonate and for the abdomen a spongio-piline electrode, eight inches in diameter, instead of the small instruments so much in vogue.

In using faradism the author advises that the current be passed to the patient through the nurse's hand after a thorough soaking in warm water, with an attempt to get a massage effect in addition; but no directions are given for the use of a slowly interrupted faradic current for individual muscular contraction and exercise, one of the main-stays in the treatment of severe cases of neurasthenia. Dr. Robinson evidently studies and treats the patient as well as his disease.

Hypnotism, Mesmerism, and the New Witchcraft. By Ernest Hart. With twenty illustrations. New York: D. Appleton & Co., 1893.

Familiarity with the literature of the delusion variously known as hypnotism, mesmerism, witchcraft, etc. with thirty years' personal study of its phenomena, eminently fitted Mr. Hart for the investigation he undertook of the performances of Dr. Luys and Count Rochas. If

anything was needed to show how debasing all such experiments are, and to what extremes of imposture and immorality they may lead, these fearless papers have left that need no longer existant.

Mr. Hart shows clearly that the hypnotic state is an endowment of the subject, independently of the operator. But he shows, too, how the unfortunate subjects may become degraded into machines devoid of will, and what power the unscrupulous may gain over them. He has done a service not only to medicine but to sociology, to morality, and honesty.

We are glad that his papers have been gathered into book-form for permanent reference.

A CHAPTER ON CHOLERA FOR LAY READERS: History, Symptoms, Prevention, and Treatment of the Disease. By WALTER VOUGHT, Ph.B., M.D. Illustrated. 12mo, pp. 110. Philadelphia: The F. A. Davis Co., 1893.

THE lapse of time has fortunately almost dissipated the prognostication that "there is every reason to believe that cholera will appear this summer in our own country." Though a few cases have been brought to our doors, there is every reason to believe that our quarantine-measures will prevent the entrance of the disease. Dr. Vought has nevertheless succeeded in preparing a most interesting account of what there is worth knowing upon the subject. In successive sections he deals in a perspicuous manner with the history, the etiology, the epidemiology, the semeiology, the diagnosis, the prognosis, the treatment, and the prevention of cholera. While the work is dedicated to "lay readers," it will also prove valuable to medical men. It is thus deserving of a wide circulation.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1889–90. In two volumes. Washington, D. C.: Government Printing Office, 1893.

THE good results of such a work as this report can hardly be exaggerated. It is a mine of most valuable information to anyone interested in the subject of education of whatever kind and in all civilized countries. As regards medical education, the results of the report have already been epitomized by Dr. Bayard Holmes, of Chicago, in the *Journal of the American Medical Association*, January 14, 1893, a selection from which appeared in THE NEWS of February 18, 1893.

CORRESPONDENCE.

A LETTER FROM PROFESSOR CZERNY, OF HEIDELBERG.[1]

MY DEAR DR. C. H. MASTIN, Mobile, Alabama, U. S. A.:

I am truly ashamed that I gave you so much trouble, and that now the health of my wife and some unexpected troubles in the administration and arrangement of my clinic will interfere with my intention to visit the Congress at Washington, and to thank you personally for all your kindness, which you so richly bestowed to me during this year.

I must go with my wife to Kissengen, and I hope that she will be so much better that I can visit at the end of September the Congress at Rome.

You have been so kind to announce my arrival to many of the most prominent men in our science, and I must regret very much that it is impossible for me to use this opportunity to make the acquaintance of your great and interesting country, and the eminent members of the medical profession in America.

I hope that it will be possible for me to meet you in some more quiet year than this of the World's Fair, and that your kindness will pardon the troubles which I gave you by reason of the Pan-American Congress.

Some days ago I received the *Transactions and Minutes of the American Surgical Association*, and see that you are the Secretary of the Gross Monument Committee. Please let me enclose the little sum of $20 as a contribution to the monument, and express my admiration of the founder of the American Surgical Association and of the surgical work which he has done in your great country.

Believe me, dear colleague, the expression of the highest esteem of

Yours, very truly,

VINCENZ CZERNY.

HEIDELBERG, Aug. 1, 1893.

[1] [Through the courtesy of Dr. C. H. Mastin, of Mobile, we are permitted to publish this interesting personal letter.—ED. NEWS.]

FOREIGN BODY IN THE EAR FOR THIRTY-NINE YEARS.

To the Editor of THE MEDICAL NEWS,

SIR: In THE NEWS of August 5th, page 158, I noticed an account of a foreign body having been in the ear for twenty-one years.

On the 2d of April, Mrs. M., forty-four years old, came into my office complaining of a pain in the left ear, which, she said, had ached at times since she was a child. On examination I found that hearing was almost entirely lost in this ear and that the canal was filled with a hard substance. After considerable difficulty I dislodged a mass as large as an ordinary white bean, which in reality it proved to be, and which the woman recollected to have gotten in the ear when she was about five years of age, and which had thus remained there for thirty-nine years. Immediately after its removal she could hear the watch-tick at a distance of twenty inches from the ear, and since then she has had no trouble of any kind with the ear.

Respectfully,

W. F. CONNERS.

OIL CITY, PA.

NEWS ITEMS.

Pan-American Medical Congress.—Program of the Section on General Medicine: "The Principles of Immunity and Cure in the Infectious Diseases," by Victor C. Vaughan, of Ann Arbor; "Formas del Impaludismo," by Francisco A. Risquez, of Venezuela; "A Contribution to the Study of Prolonged Intermittent Fever," by David Lobo, of Venezuela; "A Study of Some Cases of Chronic Diabetes," by N. S. Davis, Jr., of Illinois; "Facts in Stethoscopic Percussion," by Henry Sewall, of Colorado;

"Typhoid," by W. C. Dabney, of Virginia; "The Importance of Eliminating Pelvic Diseases in General Diagnosis," by Mary H. McLean, of Missouri; "Colera Morbo Asiatico," by Santiago Hernandez, of Cuba; "Cholera: its Diagnosis, Prognosis, and Treatment," by J. M. Hurley, of California; "Cholera Asiatica," by J. D. Burch, of Texas; "A Case of Akromegalia in a Giantess," by Woods Hutchinson, of Iowa; "Cold Steel as an Anti-rheumatic," by W. K. Vance, of Tennessee; "Nutrition *vs.* Stimulation in the Treatment of Chronic Diseases," by W. H. Maxson, of California; "De la Buba," by Luis Razetti and N. Guardia, of Venezuela; "A New Disease of the West Indies," by Cuthbert Bowen, of Barbadoes; "La Cause de la Fièvre Jaune," by J. B. Lacerda, of Brazil; "The Bacteriology of Dengue Fever," by J. W. McLaughlin, of Texas; "Culture of Anaërobic Bacteria," by F. G. Novy, of Michigan; "A New Anaërobic Bacillus of Malignant Edema," by F. G. Novy, of Michigan; "Clinical Notes on Amebic Dysentery," by H. A. West, of Texas; "Some American Ideas about Chronic Diarrhea," by Ephraim Cutter, of New York; "Tratamiento Medico del Vomito Negro," by S. B. Mateo, of Cuba; "La Folie cher le Negre," by J. B. Lacerda, of Brazil; "Progressive Pernicious Anemia," by Judson Daland, of Pennsylvania; "Vasomotor Ataxia," by S. Solis-Cohen, of Pennsylvania; "The Value of Rest as a Therapeutic Agent in Chronic Pulmonary Tuberculosis," by Karl Von Ruck, of North Carolina; "Consideraciones Sobre dos Casos de Anemia por Ankylostoma Duodenale Observados en el Hospital del Victor Manuel de Lima," by J. B. Agnoli, of Peru; "Recent Experiences in Croupous Pneumonia, with Observations on Treatment by Subcutaneous Injections of Saline Solutions," by R. L. Cunningham, of Alabama; "On the Occurrence of a Form of Chronic Bright's Disease other than the Typical Fibroid Kidney, without Albuminuria," by D. D. Stewart, of Pennsylvania; "The Complicating Conditions, Associated Diseases, and Mortality Rate in Erysipelas," by James M. Anders, of Pennsylvania; "Carcinoma of the Bones, with Multiple Fracture; Ulcer of the Duodenum, with Death from Hemorrhage," by John H. Musser, of Pennsylvania; "The Anatomic Relations of the Plasmodium Malariæ in Pernicious Fever," by George Dock, of Michigan; "Filaria," by G. DeSaussure, of South Carolina; "The Nature of the Germicidal Constituent of Blood-serum," by Victor C. Vaughan, of Michigan; "Forced Respiration," by George F. Fell, of New York.

Papers have also been promised by Manuel Carmona, of Mexico; J. E. Graham, of Ontario; Dr. Guzman, of Nicaragua; Charles G. Stockton, of New York; F. Peyre Porcher, of South Carolina; C. S. Bond, of Indiana; I. N. Danforth, of Illinois; H. C. B. Alexander, of Illinois; E. L. Shurly, of Michigan; and W. S. Christopher, of Illinois.

The William F. Jenks Memorial Prize.—The third triennial prize, of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "Infant Mortality during Labor, and its Prevention."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children;" and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1895, addressed to Horace Y. Evans, M.D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelop bearing the same motto and containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

The Cholera.—The Imperial Board of Health of Berlin announces that there have been thus far this Summer only four cases of cholera in Germany. Three of the persons attacked died.

The official cholera report from the affected Russian governments for the week ending August 21 is as follows:

In Kiev there were 529 new cases and 184 deaths; in Nijni Novgorod, 468 new cases and 191 deaths; in the Don province, 245 new cases and 109 deaths; in Samara, 198 new cases and 75 deaths; in Kazan, 75 new cases and 28 deaths; in Kalisco, 97 new cases and 33 deaths; in Minsk, 32 new cases and 15 deaths; in Simbirsk, 31 new cases and 11 deaths, and in Kherson, 54 new cases and 22 deaths.

In the City of Moscow the daily averages for the week were 99 new cases and 38 deaths.

There have been five cholera deaths at Helsingfors, the capital of Finland.

From Bucharest it is stated that no cholera exists in that city. At Soolina the epidemic spreads rapidly. The mortality is exceptionally large.

There were on August 21 nine fresh cases of cholera in Naples, and six deaths. Seven fresh cases and five deaths were reported on August 22.

Deaths from cholera are reported from Oviglio, Roocaverano and San Giuliano-Vecchio.

Transportation Rates to the Pan-American Medical Congress have been obtained over most of the railroad routes to Washington at one and one-third the usual rate for the round trip, on the certificate plan. The Chairman of

the Committee is Dr. H. L. E. Johnson, No. 1400 L Street, N. W., Washington, D. C. The certificate referred to must be secured at the time of the purchase of the ticket to Washington, on which, properly signed by Dr. Johnson, the reduced rate will be allowed returning. The full fare is to be paid on the going trip to Washington, and a two-thirds reduction is allowed when the ticket is purchased in Washington for the return trip. These certificates must be obtained at the ticket offices at the time the ticket is purchased. Be sure to state that you are a delegate and will be in attendance at the meeting.

National Conference of State Medical, Examining, and Licensing Boards.—At a recent meeting of the National Conference of State Medical, Examining, and Licensing Boards held at Milwaukee, it was the expressed desire of the members present that all State Boards should be enrolled as members of the Conference, in order that future meetings shall prove of more than ordinary interest and profit, to the end of elevating the standard of medical education. It is also desirable that there be established closer relations between the various Boards, so that there may be an interchange of ideas and an active coöperation in all that pertains to higher medical education. The first annual fee is $2. Dr. C. K. Cole, President of the Board of Medical Examiners of Montana (Helena), is the Secretary and Treasurer of the National Conference.

Charcot Dead.—A cablegram from Paris announces that Jean Martin Charcot, the distinguished French physician, died on August 15th at Morvan.

Charcot was born in Paris in 1825. In 1856 he was appointed Physician to the Central Bureau, and from that time devoted himself to the study of the nervous system. His writings have been quite voluminous. He was a member of the Institute of France, of the Royal Irish Academy, of the Royal Medical and Chirurgical Society of London, and of many other scientific societies in various countries.

Dominion Medical Monthly is the name of a new medical monthly emanating from Toronto, Canada. The first number bears the date of July and contains a report of the third case of symphysiotomy recorded in Canada, in addition to an article on appendicitis, reports of societies, and other miscellaneous matter. The journal promises to be one for and by the medical profession. We question the wisdom of presenting reading matter and advertisements on the same pages.

Dr. John Guitéras, formerly Passed Assistant Surgeon Marine-Hospital Service, now Professor of Pathology in the University of Pennsylvania, has been appointed a Sanitary Inspector in the Marine-Hospital Service, and has been ordered by Supervising Surgeon-General Wyman to Brunswick, Ga., to assist in all preventive measures employed there.

BOOKS AND PAMPHLETS RECEIVED.

Manual of Chemistry. By W. Simon, Ph.D., M.D. Fourth edition. Philadelphia: Lea Brothers & Co., 1893.

Two Lectures on the Conduct of the Medical Life. By S. Weir Mitchell, M.D., LL.D. Addressed to the Students of the University of Pennsylvania and the Jefferson Medical College. Philadelphia: University of Penna. Press, 1893.

A Year's Work in Minor Surgical Gynecology at the Kensington Hospital for Women. By Charles P. Noble, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1892.

Points in Office Practice in the Treatment of the Diseases of Women. By Charles P. Noble, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1892.

A Clinico-pathological Study of Injuries to the Head, with Special Reference to Lesions of the Brain-substance. By Charles Phelps, M.D. Reprinted from the New York Medical Journal, 1893.

Neuritis and Myelitis and the Forms of Paralysis and Pseudo-paralysis following Labor. By Charles K. Mills, M.D. Reprinted from the University Medical Magazine, 1893.

The Necessity for Early Recognition and Treatment of Suppurative Diseases of the Tympanum, and their Relation to Cerebral Complications. By S. MacCuen Smith, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

The Present Status of Electrolysis in the Treatment of Urethral Strictures, with Statistics of One Hundred Cases. By Robert Newman, M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Cure of Complete Prolapse of the Rectum by Posterior Proctectomy. By John B. Roberts, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

Higher Preliminary Medical Education. The Influence of the German Universities upon our Profession. By Henry E. Dwight, M.D. Pamphlet.

The Etiology, Distribution, and Prevention of Land and Ship Cholera. By George M. Kober, M.D. Reprinted from the Proceedings of the California Sanitary Convention, 1893.

Constipation, Especially in its Relations to the Diseases Peculiar to Women. By Andrew F. Currier, M.D. Reprinted from the New York Medical Journal, 1893.

Certain Forms of Septicemia Resulting from Abortion. By Andrew F. Currier, M.D. Reprinted from the Annals of Gynecology and Pediatry, 1893.

Shaking Palsy. By C. L. Dana, A.M., M.D. Reprinted from the New York Medical Journal, 1893.

A Manual of Diseases of the Ear. By Geo. P. Field, M.R.C.S. Fourth edition. Philadelphia: Lea Brothers & Co., 1893.

Proceedings of the State Sanitary Convention. Held under the auspices of the State Board of Health of California. Sacramento: H. S. Crocker & Co., 1893.

Lymphoid Growths in the Vault of the Pharynx. By Thomas H. French, M.D. Reprinted from the Brooklyn Medical Journal, 1893.

The Structures in the Mesosalpinx: Their Normal and Pathological Anatomy. By J. W. Ballantine, M.D., F.R.C.P. Edin., F.R.S. Edin., and J. D. Williams, M.D., B.Sc. Edinburgh: Oliver & Boyd, 1893.

Hemianopsia or Hemianopia. By William Oliver Moore, M.D. Reprinted from International Clinics. Vol. III, second series.

System of Diseases of the Ear, Nose, and Throat. Edited by Charles H. Burnett, A.M., M.D. Vol. I. Philadelphia: J. B. Lippincott Co., 1893.

Sulla Origine dei Corpuscole del Sangue. Ricerche del Dott. Vincenzo Allara. Milano: Presso La Libreria Editrice Galli di C. Chiesa E. F. Guindani, 1893.

University of Pennsylvania. Catalogue and Announcements, 1892–93. Philadelphia: Printed for the University, 1893.

Seventy-ninth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Hospital, 1892. Boston: L. Barta & Co., Printers, 1893.

Surgical Therapy of Rectal Cancer. By Thomas H. Manley, M.D. Reprinted from Merck's Bulletin, 1893.

The Johns Hopkins Hospital Reports. III. Reports in Pathology. Baltimore: The Johns Hopkins Press, 1893.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE AFTER-TREATMENT OF CATARACT-EXTRACTION.

BY WILLIAM OLIVER MOORE, M.D. (Columbia),
PROFESSOR OF DISEASES OF THE EYE AND EAR, N. Y. POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, NEW YORK.

ON the completion of the operation of extraction of a cataract, the cornea and the conjunctival cul-de-sac should be carefully washed with a warm boric-acid solution, in order that all secretions or coagula may be removed—a solution of mercuric chlorid, 1:8000, may also be used. The eyelids should then be gently closed, and over them placed a small square of old linen, either dry, or covered with oleum petrolei, cold cream, or the like. When the skin is delicate the oiled linen is preferable. Small pads of absorbent cotton are now gently placed over the linen cloths, sufficient in quantity to fill the space between the eyeball and the forehead, so that the pressure of the bandage will be uniform and gentle. This cotton may be medicated or not, as desired by the surgeon. Over this dressing is placed the roller bandage. This is made of fine baby-flannel, if in the winter season, and of cheese-cloth if in the summer. It should be from one and one-half to two inches wide, and about three yards in length, applied in the form of the well-known figure of 8. One begins on the cheek of the same side as the operated eye, then over this around the forehead, over the fellow-eye, and so on until the roller is finished. As a rule, only one pin is required to fasten the bandage, and this of the ordinary kind; I have never seen a bandage properly applied when *one pin* was not sufficient to hold it in position, except in the case of women having long hair. It is my custom in such cases, besides using the pin, as mentioned, to either fasten the bandage by means of a hairpin passed through it, and into the back hair, thus securing it, or put on an old-fashioned nightcap over the bandage, which keeps it firmly in place.

I am fully aware that all I have said as to the bandage is considered by many to-day as unnecessary and behind the times, and that we are only called upon to place bands of water-plaster, or any adhesive strap over the closed eyelids, and all will go well; this, we must admit, may happen; and I have also seen *one case* in which no dressing save a shade was required, and judging from the results, I should commend this plan of after-treatment, although we must all admit that the patient has far more comfort with the bandage. When the bandage is applied, the patient, if in the operating-chair or upon the table, should be gently led to bed, and when in it, allowed to assume any position that is comfortable and easy. The old practice of keeping cataract-patients in bed upon their back for the first twenty-four hours is cruel and uncalled for. The only caution necessary is that the eye be not struck by the patient's hands, the corner of the pillow, etc. The patient may have freedom in micturating, for great inconvenience and annoyance is often caused by the attendant insisting on the use of urinals, "ducks," etc. At the end of twenty-four hours, or earlier, if the patient is restless, a sitting posture may be assumed, the patient being dressed and allowed the use of an easy-chair. Many patients have done badly in the past, from the too rigid observance of the old ideas of after-treatment. Hypostatic congestion of the lungs may be set up by the rigid enforcement of rest on the back.

It is my custom to leave the bandage on both eyes for four days, without change, unless severe pain is experienced, when it is immediately removed; the eyelids are bathed gently with a solution of mercuric chlorid (1:10,000) in order to cleanse them; the lids should then be gently opened, and the affected eye inspected. When no pain occurs after the operation, and all is quiet at the end of four days, I remove the bandage *for the first time*, and inspect the eyes, first having washed them with the mercuric chlorid solution.

Of course, it is taken for granted that the room in which the patient is placed is moderately dark and has no sunlight falling in the apartment. I have, however, no sympathy with those who keep the room absolutely black—in fact, so dark that the blackness can "be felt." Such darkness not only injures the health of the patient, but is also a temptation for the attendants to keep the room untidy, thus favoring germ-development. It is to be hoped that these days will soon pass, and that instead of the *room being made dark*, the patient's eyes only shall be properly shielded during the healing process, by placing a fold of black silk or muslin over the applied bandage.

If, upon inspecting the eye, no undue redness is noticed, and if no evidences of iritis are present, a mydriatic need *not* be used, but should the pupil be

narrow, and the eye-ball quite red, then atropin sulfate, two grains to the ounce of water or oil, should be instilled twice daily. The bandage need not be applied over the unaffected eye after the fourth day, it being sufficient usually to simply shield it by means of a shade. On the eighth day I usually remove the bandage from the affected eye in the morning, and have the eye only shaded during the daytime, reapplying the bandage at night. London-smoke glasses are very useful as protectors, and with a shade over them give ample protection against the strongest light.

If the healing proceeds rightly, the patient may have the freedom of the floor upon which his room is located—that is, in walking to and fro for exercise—and at the end of four weeks he may have lenses adjusted, and go on with his usual life as before.

In an experience in the Mary Fletcher Hospital, at Burlington, Vermont, extending over a period of six years, the average duration of hospital-treatment was ten days, and in New York it has not exceeded fourteen. The shortest period of hospital-treatment was in a male, aged ninety-one, who remained in the hospital *three days*, when he was allowed to return to his home, with the wound thoroughly healed and the eyeball pale. This is one of the shortest periods on record. This patient was seen by my colleague, Dr. Roosa, who remarked that he should have thought three weeks to have elapsed, rather than three days.

In cases in which pain occurs, and in those in which on removing the dressings pus is found on the linen pad in considerable quantity, it can be safely concluded that purulent infection of the wound has taken place. This sign rarely fails. On opening the eyelids the corneal wound will be found infiltrated throughout its entire extent, and perchance pus will be found in the anterior chamber. In these cases the best treatment, and that which I adopt, is, after having carefully washed the eyelids with the mercuric chlorid solution, to cauterize the corneal wound throughout its entire length with the galvano-cautery, thus attempting the destruction of the infecting virus. Hot-water applications, made as hot as can be borne, used every two hours, ten minutes at a time, will greatly relieve the pain, and cut short the suppurative process. Atropin sulfate (gr. ij, aquæ ʒj) used every two hours, keeps the iris out of harm's way, and when combined with cocain greatly mitigates the pain. The reopening of the wound, and the removal by forceps of the exuded matter from the anterior chamber, are of no avail; nor is the injection of Panas' fluid into this space advisable, my experience having been against both of these procedures. The eye should be shielded from light in all such conditions. Purulent infection of the wound, and attendant suppurative iritis, usually result in closure of the pupil and a drawn-up iris—it may even go on to *panophthalmitis*, though this is rare.

The closure of the pupil as the result of this suppurative condition reduces vision to only perception of light. This is best treated by *iridotomy*, a few weeks after all the acute inflammation has subsided. *Iridotomy* may be performed by means of De Wecker's method—that is, by using the specially made stop-keratome, or iridotomy knife, which he has devised, and his iridotomy scissors. The scissors, or at least those that I have seen, are objectionable, in that being forceps-scissors they cut unevenly—that is to say, they bind well at the heel of the instrument, and not well at the extreme point, so that they bruise the iris rather than cut it, having given rise, in several cases seen, to irido-cyclitis. De Wecker's iridotomy may be made single or double, according as the iris is incised once or twice. The operation is done under cocain. The iridotomy knife is introduced in the same manner as for an iridectomy—that is, about one-fourth of an inch from the corneal margin, the instrument being held perpendicularly to the eyeball, and by gentle pressure forced into the corneal tissue and into the anterior chamber until the stop on the knife reaches the cornea, so that in this step of the operation the knife-blade is in the anterior chamber, in front of the iris and occluding membrane, and behind the cornea. The knife is now partially withdrawn, and then its point pushed through the iris tissue or membrane, making thus an opening for the subsequent introduction of the iridotomy scissors. The knife is then gently withdrawn, and the iridotomy scissors, with its blades closed, is introduced through the corneal incision (which is at the superior border) into the anterior chamber. One blade is then passed through the opening made in the iris tissue or membrane (or both), and the other blade being in front, the forceps blades of the scissors are pressed together and the tissue between the blades severed. If there is elasticity to the tissue a fair opening will be immediately noticed. Failing to obtain a sufficient pupil by one incision, the blades may again be placed in another position, and a second incision made, connecting with the first, forming an inverted V, or cordiform pupil. In some rare instances the parts cut will not retract, and we have to resort to removing a piece of the iris tissue. In treating these cases of closure of the pupil after purulent iritis and the like, I much prefer to use the much simpler method, iridotomy, with an ordinary cataract knife, as the procedure is so easy and there is less manipulation and danger in its performance.

The eye cocainized, with speculum and fixation-

forceps in position, securing the eyeball, a sharp, narrow Graefe cataract-knife is thrust through the cornea above and toward the peripheral portion, into the anterior chamber; the point is then thrust through the iris and membrane tissue into the vitreous chamber, and by a rapid downward cut the parts are divided, so that the resulting incision will fall opposite the corneal center as near as may be. The knife is now withdrawn, a small quantity of aqueous escaping, and the wound of entry closing immediately. This simple iridotomy is very effectual, and is to be highly commended.

Failure to secure a sufficient opening by means of the simple iridotomy at the first attempt, we may, after a fortnight, make a second endeavor, when we are likely to succeed.

The after-treatment to be adopted after either of the foregoing forms of iridotomy includes rest, a bandage, and the use of atropin sulfate (gr. ij to aq. ℥j), two drops four times a day—for one week. Usually at the end of this time any reaction that may have occurred will have subsided. As soon as the eye is quiet and all redness has disappeared lenses may be adjusted.

Prolapse of the iris is another accident to be spoken of in the after-treatment of cataract-patients. This is more especially liable to occur in those patients on whom no iridectomy has been performed, or after what is called the "simple operation." Even after the dressings have been adjusted, and during the interval between the operation and the first removal of the bandage this may take place, even in those patients in whom no prolapse occurred at the time of the extraction. This I have frequently seen in the practice of others (I prefer the compound operation); it has been probably caused by some undue exertion on the part of the patient, as coughing or sneezing, which has forced the iris through the unhealed wound.

When this condition is found, gentle efforts should be made to repose the iris into the anterior chamber by means of a spatula, but in my experience this rarely succeeds; eserin instillations are also very strongly advised, but again my experience is also against this method of treatment. Mydriatics and myotics do not act with any degree of satisfaction on the iris when the anterior chamber is leaking. When the iris cannot be replaced or reposed by means of the spatula, I should emphatically advise its excision by iridectomy. The treatment suggested by some, to allow the incarcerated iris to heal in the corneal wound, is, without question, dangerous. In those instances in which the iris becomes entangled in the angles of the corneal incision, when iridectomy has been performed, it is advisable to introduce the iris-forceps and free the entanglement by removing a piece of the iris-tissue. One should then carefully rub the iris back from the wound by means, *e. g.*, of a spoon, by pressure on the cornea over the point of the recent difficulty. This condition is exceedingly rare, if the precaution has been taken after the extraction, of carefully inspecting the wound before applying the dressings.

Prolapse of vitreous is occasionally found when the dressings are removed for the first time—sometimes appearing as a small bead in the center of the corneal incision, and again occupying the whole length of the wound. Healthy vitreous thus presenting in the wound acts as a foreign body and a wedge and prevents the healing of the parts. In the few cases that have come under observation I have found that a change from the former recumbent position and one of quiet repose to that of the erect posture and active exercise has done much to cause the vitreous to recede. By active exercise I mean walking to and fro in the ward or apartment with considerable freedom. Some advise cutting off the protruded vitreous by scissors, and then reapplying the bandage; some even advise introducing a delicate suture in the corneal wound. The first method suggested is preferable *every time*.

Entropion of the lower lid is occasionally the cause of much annoyance in the after-treatment of cataract, as the inverted lid causes irritation and conjunctivitis. The quickest way is to remove an elliptic portion of the skin of the lower lid and then unite the edges, thus producing shortening of the lid; many will not, however, submit to this. Straps of plaster may be placed close to the ciliary edge of the lid, and the lid drawn down by fastening the other extremity of the plaster on the cheek; this is unsatisfactory, as the tears soon cause the plaster to give way. Again, the lid may be held down by the finger and the patient directed to look up; while in this position an application of flexible collodion may be made to the skin of the lid parallel with the ciliary border, and the entire width of the lid. When the collodion is fixed the lid may be replaced, and usually this procedure will prevent the entropion for twelve hours, when the collodion band may be reapplied.

In some cases, in addition to these local measures, the administration of the fluid extract of conium internally has been of service. It seems to have an especial action on the muscles of the eyelids. It may be given in fifteen-drop doses every three or four hours, according to the effect produced.

Delirium after cataract-extraction has long been noticed and was thought by many at first to be due to atropin-poisoning; but this cannot be the fact, as it occurs in patients when no atropin or other drug has been used in the eye. It is not a surgical delirium, as the shock in the operation for cataract

is of no importance. It is probably due to the deprivation of light, and with patients of feeble physical or mental make-up. It not only occurs in those who have been operated upon for cataract, but has been noticed to occur in those confined to darkened chambers for other causes. Should this condition occur, it is evident, therefore, that the removal of the bandage and the use of a shade or colored spectacles are called for.

Striped keratitis is occasionally met with during the healing process, and may show itself in different degrees of intensity from a few bands to a complete opacity of the cornea. It is due to changes in the endothelial layer of the cornea produced by traumatism during the extraction. It usually clears up and the condition gives way in a few weeks; only rarely does a permanent opacity of the cornea remain.

Lachrymal diseases often coexist with senile cataract, and even in those cases in which the precaution has been taken to operate upon the diseased lachrymal passages before the cataract-extraction. Poisonous secretions are prone to linger and form beneath the closed eyelids. Some prefer to put a fine powder of iodoform along the line of the corneal wound; the only objection is the disagreeable odor. It is my habit in all such instances to remove the bandage after the second day, and not to replace it save at night, being satisfied to protect the eye from undue light by means of smoked glasses and a shade. By bathing and washing out the conjunctival cul-de-sac with mercuric chlorid solution, we are sure to prevent infection of the corneal wound by the infectious lachrymal secretions. In other words, these should be treated as open wounds.

Pain a few hours after the extraction of cataract is frequently noticed, and is to be expected in moderate degree, as the natural sensations of the parts are returning, and added to this is the sting and smart of the operation itself; if, however, the pain and discomfort do not speedily subside, it is wiser to remove the dressings, and very gently, without exposing the eye, pull down the lower lid of the operated eye a very little, just enough to allow any pent-up tears to make their escape. I have frequently seen this simple procedure give entire relief to the patient. The dressings should then be reapplied, and such cases may then go on favorably. Neglect to attend to such trifles will often protract the healing process.

Membranous or secondary cataract. In the majority of patients operated upon for the extraction of cataract, membranous or secondary cataract develops, varying in its appearance from a few weeks to several months after. So much so is this the case, that most operators explain to the patient before the extraction, the probable necessity of a secondary operation, or needling, that they may obtain the full acuteness of vision.

This secondary cataract, so called, is simply the thickening or wrinkling of the posterior capsule of the lens—with perhaps some portion of the lacerated anterior capsule curled upon itself. This membrane, being in the line of vision, of course reduces very materially the acuteness.

So long as we continue the present mode of extraction by lacerating the anterior capsule and leaving the capsular mass in the interior of the eye, we must expect membranous cataract. The ideal operation would be to remove the lens in its capsule; this has been done both by design and also by accident. However, as a plan of operating it has been generally abandoned.

In many the secondary cataract shows at the very outset, and even when the healing process is satisfactory. It can be seen best by an oblique light as a gray film stretched across the pupillary region, and by the ophthalmoscopic mirror appears as a cobweb-like material, wrinkled, and sometimes looking like watered silk, the reflex of the fundus showing through it. The density and opaqueness of the capsule cause more or less diminution of sight. Operations for membranous cataract should not be attempted until all signs of inflammation have disappeared from the eyeball, when needling may at any time be performed. The pupil should be fully dilated by a mydriatic, and the eye anesthetized by cocain. A speculum may be used for fixing the eyelids, or they may be held open by the fingers of the operator; some prefer the speculum and fixation forceps—in either instance the eyeball is fixed. A fine cataract-needle is taken and passed through the cornea perpendicularly to its surface, the point entering its tissue near the periphery, and then through and into the membrane, and then by a rotatory motion of the handle the point is made to make a rent in the cobweb-like substance. Care should be taken that no undue traction is made upon the ciliary region, as cyclitis may be set up by excessive manipulation. When the membrane is very delicate and thin, we can determine if the result has been accomplished by having an assistant concentrate light upon the cornea with a strong convex lens. If a sufficient opening has been made by the needle, it may be quickly withdrawn; the wound of entry is insignificant, and closes immediately on the withdrawal of the instrument.

When on the introduction of the needle into the membranous cataract the capsule moves with the needle without tearing, another, second, needle should be introduced on the opposite side of the cornea and the points of the two brought together and then gently separated, causing a rent; or one needle may remain fixed and the other one tear the

membrane in a direction away from it. This procedure will usually cause the most dense and tough membrane to give way.

Occasionally the opaque capsule will move to and fro in the pupil and cause the patient much annoyance, or the opening will get smaller. In such cases it is wise to do an extraction of the capsule, by making an incision at the upper border of the cornea with an iridectomy-knife, and then introduce into the anterior chamber a sharp hook, which is entangled in the membrane and then carefully withdrawn through the corneal incision; delicate scissors should then clip off the capsular mass. If the hook fails to bring the capsule into the wound, then delicate iris-forceps may be introduced into the anterior chamber and the capsule grasped by their blades, and then drawn into the corneal wound and excised by scissors. If the extraction was without iridectomy, care must be taken not to engage the instruments in the iris-tissue; if by chance the iris should prolapse, and it cannot be replaced by a spatula, it is best to excise it.

The treatment after either of these modes of discission, or extraction of the capsule, includes rest, a bandage for forty-eight hours, and atropin-instillations three or four times a day. If much pain results from these operations, the use of hot fomentations will usually give relief; if not, cocain may be added to the atropin solution.

Cystoid cicatrix occasionally occurs after extraction of cataract, especially if care has not been taken to have the angles of the wound free of iris-tissue at the time of the extraction; it may also occur in those when the healing process has been protracted, and thinning of the sclero-corneal junction has taken place in consequence. It is best to remedy this defect at once, for if neglected, it is likely to lead to irido-cyclitis. Iridectomy usually gives relief in these cases.

85 MADISON AVE.

THE DIFFERENTIAL DIAGNOSIS AND TREATMENT OF SUPPURATION OF THE ACCESSORY CAVITIES OF THE NOSE.

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IT is the purpose of this paper to limit it to the more characteristic subjective and objective symptoms which enable us to differentiate between the affected areas and suppurative foci, together with a brief consideration of their surgical treatment.

Although it is only a comparatively short time since this subject has engaged the attention of rhinologists, yet our literature abounds with reports and communications on this subject, especially on empyema of the maxillary sinus, which latter has received the greater attention because it is more easily accessible and formerly was more often diagnosticated by accident. At the present time, while the recognition of suppurative disease of one or the other of the accessory cavities is comparatively an easy matter, the determination of the source of the purulent secretion or its focal point is often involved in considerable obscurity.

Most of the so-called characteristic symptoms are more or less common to disease of all of the accessory cavities, viz.: (*a*) Suppuration; (*b*) Neuroses, manifested by cephalalgia, neuralgia, and psychic phenomena; (*c*) Ocular disturbances.

a. SUPPURATION.—We have a purulent discharge (except in the latent form of the disease and when the normal outlet is obstructed) by way of the anterior and posterior nares, dependent upon concomitant obstructive lesions in the nasal fossæ involving the anterior or the posterior nasal openings; it is more or less periodic in its appearance, increased in the morning or on rising. The odor of the purulent discharge may be negative, or there may be a decided fetor, dependent upon some peculiarity of the pus, due to retention, decomposition, or admixture with retained secretions. We may have ozena, which term, to prevent confusion, should be restricted to fetor of the nasal secretions without specifying any particular pathologic condition.

Theoretically, the pus from the maxillary, frontal, and anterior ethmoidal sinuses should make its appearance in the middle meatus and nasal fossæ, but in the presence of an obstructive lesion involving the anterior end of the inferior turbinal, the direction of the purulent discharge would be toward the posterior nasal openings, and simulate disease of the posterior ethmoidal cells and sphenoidal sinus—the so-called Tornwaldt's disease.

Fränkel[1] has called attention to an increased flow of pus on placing the head well forward and downward for some moments as being characteristic of antral empyema. This sign cannot be regarded as a positive indication of the source of the purulent discharge, as it may occur in suppuration of the anterior ethmoidal cells, although, by preliminary cleansing of the middle meatus, and making the test in the morning, this would undoubtedly be quite a reliable differential sign: Pus from the ethmoidal and frontal sinuses is usually not so abundant as in antral empyema; furthermore, in ethmoidal suppuration, the quality of the pus is usually more inspissated and tends to caseation and the formation of crusts, which is seldom a feature in antral disease.

Posterior rhinoscopy often discloses caseous pus in the superior meatus, with maceration of the mucosa covering the middle turbinal, which is quite

characteristic of suppuration of the posterior ethmoidal and sphenoidal sinuses. A localization of the suppurating foci in this region is rarely possible by anterior rhinoscopy, while posterior rhinoscopy will often enable us to differentiate between involvement of the posterior ethmoidal and sphenoidal sinuses and the deep fissures of the pharyngeal tonsil.

b. NEUROSES.—Cephalalgia is one of the most constant of symptoms, and is common to all diseases of the accessory cavities when there is suppuration. According to Schäffer,[2] Killian,[3] and Grünwald,[4] it is quite impossible to diagnosticate the focus of the disease by localization of the headache. Grünwald claims to have seen frontal headache very common in antral disease, and comments on the absence of facial neuralgia in his cases, though most authorities consider this a characteristic sign of antral disease.

In disease of the frontal sinus there is usually supraorbital neuralgia, intermittent in character, and aggravated by mental effort and indulgence in alcoholic liquors. In ethmoidal disease we have orbital neuralgia, which may be deep-seated and diffuse, while in sphenoidal disease we may have deep-seated cephalalgia of a very distressing character, radiating through the side of the face and involving all the branches of the trigeminus, causing dental, infraorbital, and supraorbital neuralgia.

Rouge[5] cites a case in which a diagnosis of antral empyema was made on account of a severe infraorbital and dental neuralgia. The autopsy disclosed empyema of the sphenoidal sinus, with caries of the superior wall, perforation, and subdural abscess, while the maxillary sinus was perfectly healthy.

So constant is this symptom of headache in disease of the accessory sinuses that it is in every case advisable to carefully examine the nasal and accessory cavities, even if the patient deny any knowledge of intra-nasal disease—a fact well known to the clinician. It is very difficult, sometimes even impossible, to distinguish by subjective and objective study of a case whether the symptom in question be of a reflex nature or whether caused by focal irritation due to pressure from distention of the sinus-walls, either with or without rupture, or by inflammatory involvement of contiguous structures, caries, and necrosis.

Psychic symptoms are frequently encountered, as manifested by insomnia, mental hebetude or depression, even by melancholia with suicidal impulse. Grünwald[6] relates a case of bilateral empyema of the ethmoidal and sphenoidal sinuses in which there was but little complaint of headache; but the patient suffered from continuous pressure on the vertex, as if pressed upon by a hand, with inability to think or maintain a conversation on account of forgetfulness. This patient also labored under the delusion that he stood about ten feet away from the person in his immediate vicinity, and his own voice appeared as if coming from a distance. He was also affected with melancholia and periodic impulses to suicide.

c. OCULAR DISTURBANCES may be due to disease of any one or to a combination of diseases of two or more of the accessory cavities, caused by distention, a bulging of the sinus-walls into the orbital cavity, with or without rupture or discharge of purulent contents into the orbital cavity, and giving rise to exophthalmos, amblyopia, diplopia, strabismus, contraction of the visual field, etc. Although exophthalmos may occur in connection with orbital abscess, from rupture of the orbital walls of the adjacent sinuses, it is most frequent in ethmoidal suppuration, in which case the eyeball is usually crowded outward and well forward. When the source of the orbital abscess is the frontal sinus the eyeball is crowded outward rather than forward. On account of the proximity of the sphenoidal sinus to the optic foramen and sphenoidal fissure, we may have serious involvement of the optic nerves and motor nerves of the eyeball, with more or less impairment of vision as a result of pressure or inflammatory involvement of contiguous structures.

Berger[7] calls attention to a peculiar feature in connection with amblyopia, which he claims is diagnostic of disease of the sphenoidal sinus, namely, that the peripheral field of vision is invaded before the central field is affected. He would explain this by the fact that the central fibers of the optic nerve are distributed to the outer portions of the retina.

Let me in this connection call attention to the close interdependence of ocular disturbances and intra-nasal lesions, which fact would seem to make their associated study and treatment desirable and reasonable, and clinically of advantage to both patient and surgeon.

As, in a given case of suppurative disease of the nose or accessory cavities, the foregoing facts make it quite doubtful that we can determine with certainty the focus of suppuration, we are forced to resort to additional diagnostic aids, of which I will only notice, first, the probe; second, exploratory puncture, and third, translumination.

Jurasz[8] claims to have succeeded in determining the presence of pus in the frontal sinus by the use of the *probe*. Practically, it is a most difficult procedure, except when the normal opening has been enlarged by caries or necrosis. Grünwald[9] says that he has succeeded but once in many cases in successfully probing the infundibulum, but makes the encouraging statement that the ethmoidal and sphenoidal sinuses can be successfully explored. He places the utmost reliance on the probe in deter-

mining the focal point of disease in the ethmoid, and says that without the probe it is impossible to make a negative diagnosis, while with it we are enabled to examine all the hidden spaces of the middle and superior meatus. The distal end of the probe should be bent at an obtuse angle to explore the medial as well as the lateral and under surface of the ethmoidal turbinal. In ethmoidal caries or necrosis, on sounding with the probe the distal end will penetrate a small opening with roughened edges, and find itself in a cavity which is apparently smooth. This may be due to granulation-tissue covering carious bone, and can be determined by the use of a small curet of corresponding curvature. The normal muco-periosteum in this region is closely adherent and of sufficient firmness to resist the curet if used with delicacy. Not so, however, with granulation-tissue, which being less firm yields easily to the curet, and we are thus enabled to feel denuded bone. Another point that may prove of diagnostic importance is the fact that a carious spot is usually very sensitive to the probe and consequently quite painful, while the contrary is true when the muco-periosteum is healthy. Sounding of the sphenoidal sinus, although not so easy as that of the ethmoidal cells, is readily accomplished if one bears in mind the topography of the nasal fossæ. The probe is passed between the septum and the middle turbinal, forward and well upward, when it should be felt to enter through an opening into a space in which the distal end is freely movable. The success of the maneuver depends upon a tolerably straight septum and an absence of marked hyperplasia of the ethmoidal turbinal.

Exploratory Puncture.—In antral empyema there is but one sure and reliable diagnostic sign, viz., ocular demonstration of the existence of pus by *exploratory puncture*, with or without irrigation. In spite of the fact that the presence of lamina and septa more or less complete may give negative results when pus is pent up under such anomalous conditions, it, however, occurs so seldom that we may practically be assured of its absence. Zuckerkandl reported the result of 300 autopsies, in which he found incomplete septa in seven, and in only one was there found an accessory space, which, however, communicated with the main cavity by an opening of the size of a hemp-seed.

Translumination.—The method of electric illumination introduced by Voltolini, and variously modified, was until very recently regarded as an important diagnostic aid. Like many, it has proved only of complementary value. However, it is a procedure that is absolutely unobjectionable to the patient; has some value as a positive and very much more as a negative test, and is still in favor with rhinologists as a preliminary step to methods of exploratory puncture or surgical procedures.

The diagnostic value of translumination depends upon zones of illumination and shadows or umbræ. These are modified by anomalous conformation and thickness of the osseous walls and partitions, enlarged turbinals and pathologic conditions of the mucosa of the sinuses, with or without the presence of pus. Although translumination has proved a disappointment as well as an embarrassment to many, it is a useful aid, not only in the diagnosis, but also in the prognosis of antral and ethmoidal disease.

Of late I have followed the method of Renault[11] by placing an incandescent lamp of sufficient illuminating power in the mouth laterally, below the lower wall of the antrum (not centrally on the dorsum of the tongue as usually practised), when, under normal conditions, on each side, at the level of the nasal bones will be seen a clear zone of illumination, irregularly oval, less bright than the corresponding suborbital region, but clearly distinct from the surrounding darker parts. We also get an illumination of the pupil, known as the pupillary reflex of Davidsohn[12]. Garel[13] has called attention to a new sign, viz., "Absence of luminous perception on the affected side," which has proved of great value. According as the individual has a narrow nose, small maxillary sinuses, a high arched palate, or tumefaction of the turbinals, the value of the signs of Davidsohn and Garel are more or less vitiated. However, the presence of an umbra in the ethmoidal region, with a purulent discharge from the nose and translucency of the corresponding cheek, is a diagnostic sign of great value, and would point to disease of the ethmoid.

I wish incidentally to call attention to the fact that a dark-room is not absolutely necessary for successful experimentation with this method. A dark hood of any design, or a dark cloth, such as is used by the photographer, placed over the head of the patient and that of the observer, although not so esthetic as the dark-room, is quite as satisfactory.

It is in the cases of associated suppuration of two or more of the accessory cavities that we meet with the greatest difficulties in making a differential diagnosis, especially when this occurs on the same side.

It is necessary, therefore, to determine, first, the foci of suppuration, and second, whether they are primary or secondary infections. Killian[14] and Grünwald[15] report cases of associated empyema of the maxillary, frontal and ethmoidal sinuses with antral suppuration, in which the purulent discharge from the antral cavity persisted until free exit to the pus in the frontal and ethmoidal sinuses was established, which was followed by spontaneous cure of the antral empyema.

TREATMENT.—When ordinary treatment has failed to establish free exit for the secretions through the normal openings of the accessory sinuses into the nasal cavity, and the retention of secretion or the presence of pus has been determined or is strongly suspected, it becomes necessary to establish the patency of the normal openings by the probe, the air-douche, etc., or to create an artificial opening for the free exit of pus and to secure efficient drainage.

When disease occurs in connection with hypertrophy or hyperplasia of the turbinals, exostoses, polyps, other neoplasms, or carious teeth, it is of the first importance to remove these lesions as far as possible by the proper treatment, so as to permit of free access to the affected parts. I am of the opinion that the more radical and thorough surgical measures are far more gratifying in their results to both patient and surgeon than the tentative and too conservative treatment so often pursued. Suppuration of the accessory cavities runs a decidedly chronic course, and shows little tendency to spontaneous cure. While the disease is confined to the sinuses themselves there is no serious danger to life, but when it extends to the cranial or orbital cavities the prognosis becomes correspondingly grave. Therefore, the treatment must be not only curative or palliative, but prophylactic. In most cases of suppurative disease of the accessory cavities, the amelioration from proper surgical treatment is rapid, although the cure may be slow, owing to the chronicity of the disease and the extent of the involvement of contiguous structures.

From a critical analysis of the literature pertaining to this subject and clinical experience in a few cases which the limit of time forbids my reporting in detail, I have formulated the following conclusions:

1. When the presence of pus or the retention of secretions has been diagnosticated, the indications are to secure free exit of the same and efficient drainage.

2. In antral suppuration the opening should be made with chisel and mallet through the canine fossa, according to the method of Küster[17] or that of Robertson[18], and of sufficient size to permit exploration with the little finger and the small incandescent lamps; if necessary, this is to be followed by curettage and the dry method of Krause-Friedländer.[19]

3. In sphenoidal suppuration the method of Schäffer[20] is to be commended, viz., enlargement of the normal openings by breaking through the anterior wall of the sinus with the curet, and by thorough curettage.

4. In frontal suppuration the choice of operative procedure depends upon the indications: if there is bulging of the inner and upper wall of the orbit that site should be selected for the artificial opening. The point usually selected for the latent form is immediately below the superciliary ridge, and near the bridge of the nose; the opening should be of sufficient size to give free access to the sinus, for the purpose of exploration, thorough drainage, and reëstablishing communication with the nasal cavity.

5. In suppuration of the ethmoidal cells, guided by the indications of the probe as to the presence of caries and pus, we should proceed to open up all suppurative foci by means of the snare, hot or cold, the nasal cutting-forceps, the curet, trephine, gouge, or the galvano-cautery knife.

6. A thorough knowledge of the topography of the ethmoid, its anatomic relation to the cranial and orbital cavities, together with a high degree of manipulative dexterity, will enable one to proceed with the assurance and rapidity that is so desirable in view of the free and annoying hemorrhage that is usual in intra-nasal surgery.

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705 VENETIAN BUILDING.

A SERIES OF WOOLS FOR THE READY DETECTION OF "COLOR-BLINDNESS."[1]

BY CHARLES A. OLIVER, M.D.,

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IT has long been known—ever since the time of Wilson—that of the three methods for the quick and ready determination of subnormal color-perception—direct comparison of pigment-colors, direct comparison of spectral colors, and the study of subjective after-color, complementary color—the first is the best, the most convenient, and

[1] Read before the meeting of the American Ophthalmological Society, held at New London, Conn., July, 1893.

the most accurate. The cheapest plan, and the one that is freest from error, is that of Holmgren (really Wilson), the candidate expressing his color-defect by the handling of a series of inexpensive wools. It is free from the objections of fixed tests, such as the color-tables of Daae, the yarn-covered spools of Schenkl, the pseudo-isochromatic wools of Donders, the embroidery patterns of Cohn, and the stick of Thomson. It avoids the errors of these plans, inherent in the fact that here the colors, which are mere arbitrary choices of the deviser, not only fail to express any definite percentages of lowered color-vision, and thus permit many candidates to escape by reason of the confusion-wool not being equal to the exact amount of the color-error, but also greatly curtail any choice to be taken by the candidate, by reason of the process of fixation upon tables, spools, sticks, etc. Further, it escapes the faults of a fixed method of nomenclature, as, for instance, the odd and even numbering in Thomson's stick, where the one salient point of the test is liable to become known, and the test thus rendered practically worthless.

To remedy these defects amongst the only proper and legitimate class of color-tests, I brought before this Society, in 1887, a series of loose wools, which were intended not only to avoid any mistakes that might arise from imperfect material as to color, dye, its character, and the choice of instrumentation, but to give to any instructed (even though lay) examiner a definite and intelligible grading of the exact amount and character of any lowering of the color-sense—a grading that could be compared and contrasted with any past or future examinations. and could be understood throughout the ophthalmic world.

To accomplish this purpose I made the following modifications of the Holmgren series:

I. Five individual tests were used—pure green, pure red, rose, pure blue, and pure yellow. In spite of any theoretic prejudices, the last two colors were added because they had served through a long individual experience as most useful tests in the detection of extremely slight and almost imperceptible color-changes.

II. Loose and separate skeins of wools were employed. This, the fundamental principle of the value of the Wilson and Holmgren method, can be well understood when it is considered that here no discoverable plan is given to the candidate—he merely having a mass of color-matches from which to take his own choice.

III. The colors were made of equal relative intensity. Here rests one of the greatest claims for the employment of this individual test. Nothing that is arbitrary was placed in the color-series. Each skein had a definitely related percentage of one or two of the principal test-colors, thus allowing the plan to resolve itself into the question of color-matching alone.

IV. The value of the color used in each test-skein was expressed. The unit of color, or equivalent, and its relation with every other skein in the test, was given by a system of metallic bangles which was made incomprehensible to all but the scientifically initiated.

V. The set was so constructed that it could be employed by any educated layman. This was accomplished by the system of nomenclature on the bangles, which, although unknown in their scientific value and signification by the lay-examiner in any case requiring such service, could be fully understood by any expert to whom the case was given for after-decision. This was done by reference to the key to the test accompanying each test. This method embraces the ingenious plan of Thomson. Should the case not necessitate such intermediacy, the expert examiner would know in a moment, by reference to his registry blank, the true value of the color-sense laid before him for examination.

VI. The test was so constructed that passing color-changes could be preserved and permanently kept for future comparison. This was done by the wool-naming, and was of value in furnishing means by which more accurate study of disease could be made, better notions of prognosis given, and more useful plans of therapy applied.

VII. The test was so constructed that written and verbal expressions of the character and the amount of subnormal color-perception could be given. This avoided the use of the vague terms designative of lowered color-perception, and placed the system of naming upon a sound and scientific basis, as in acuity of vision, range of accommodation, etc.

VIII. The wools were made of one grade of manufacture, and were dyed with vegetable material. This avoided any errors that might arise from supplemental use of touch, rendered the tints more lasting to light-exposure, and avoided any danger from detection of tint by odor of the employed dye.

IX. A black surface was used in testing. This was done so as to avoid as much as possible the simultaneous and successive contrasts that are so likely to form in irritated and degenerated visual organs.

After several years' trial I found that I could dispense with all but the five principal test-skeins, five pure match-skeins, and eighteen confusion-skeins of relative equal value to the pure match-skeins, thus reducing the test to an extremely simplified, though scientifically correct, process; which could be used at will in a few seconds' time by any educated

layman, or by the expert himself; a plan that was as sure to be understood in ophthalmic writings, and as certain in its answers of the ever-varying conditions of individual cases as any other methods of precision given to the scientific and busy physician.

For these reasons I have thought it well to introduce the new and simplified series,[1] believing that it is of practical advantage to every working ophthalmologist or ophthalmic expert in railway and marine service, and to every neurologist who finds it necessary to obtain a most delicate answer to the amount and degree of disturbance of sensory action in the visual apparatus.

CLINICAL MEMORANDA.

CLEFT PALATE, BOTH HARD AND SOFT, AND HARE-LIP.[2]

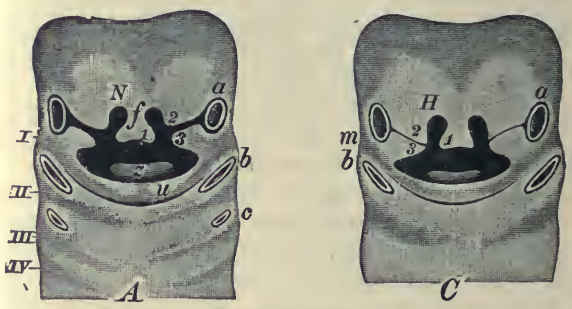
BY W. S. FORBES, M.D.,
OF PHILADELPHIA;
PROFESSOR OF ANATOMY, JEFFERSON MEDICAL COLLEGE, AND CLINICAL SURGEON TO JEFFERSON MEDICAL COLLEGE HOSPITAL.

THE affections named in the title are congenital. At the end of the third week in the development of a human fetus three deep pits, lined by a stratum of columnar epiblastic cells, appear on each side of the head, and, ultimately coming in contact with outgrowths from the developing brain, give rise to organs of special sense. One of these, the posterior, becomes the auditory vesicle; another, the middle, becomes the optic vesicle; and the third, the anterior one, placed near the median line, becomes the nasal vesicle. It is to this last that I wish to call attention.

The nasal vesicle, placed in front of the auditory and optic vesicles and close to the middle line, is connected by furrows with a deep invagination of epiblast, pushed in on the middle line, known as the stomodeum. At the fourth week of fetal life, the border of the head that forms the upper edge of the oral invagination below the anterior brain-vesicle, presents five marginal facial processes (Fig. 1, *A*.). The central one of these processes is the single fronto-nasal process (*f*, Fig. 1, *A*), which is separated on each side from the lateral nasal process (*2*, Fig. 1) by a nasal invagination. External to the lateral nasal process is the ocular invagination, at the outer and inferior border of which an outgrowth from the mandibular fold, the maxillary process, grows forward, separating the ocular invagination from the stomodeum. As it extends, its inner edge touches and coalesces with the outer side of the fronto-nasal process, making thereby a continuous upper lip for the aperture of the mouth. If from any cause the coalescence of the maxillary process with the fronto-nasal process is arrested and does not take place the deformity known as hare-lip is the result.

The union of the fronto-nasal and lateral nasal processes internally completes the edge of the anterior opening of the nostrils, while the thickening of these processes forms the nose. The lower edge of the oral invagination is made by the mandibular fold, which lies in front of the first visceral cleft, and in which the lower jaw, or mandible, is subsequently formed. These partitions between the nasal invagination and the mouth are at first superficial, but an ingrowing process from the maxillary process on each side eventually extends inward like a shelf to meet its fellow of the opposite side medially, thereby completing the roof of the mouth. At the same time the vertical septum, which grows down from above, separates the nasal fossæ and forms the nasal septum. The posterior extension of the middle nasal process, which takes part in the formation of the palate, becomes the premaxillary process.

FIG. 1.



Scheme of formation of the face and arrest of its development. (From LANDOIS.)

A, First appearance of the face; *I, II, III, IV*, the four visceral arches; *f*, fronto-nasal process; *N*, nasal orifice; *1*, inner; *2*, outer nasal process; *3*, superior maxillary process; *u*, inferior maxillary process; *b*, *c*, first and second visceral clefts; *a*, eye; *z*, tongue.

C, Arrest of the development, constituting oro-nasal cleft.

H, nasal orifice; *1*, inner, *2*, outer nasal process; *3*, superior maxillary process; *a*, eye.

Failure of union of the processes at the middle line taking place, or their development being arrested, the deformity known as cleft palate follows.

The failure of this median union of these processes may be partial or complete. Thus, the want of median union of the maxillary processes posteriorly only will produce a cleft of the soft palate; or a failure to unite may extend further, thus producing cleft in the hard as well as in the soft palate; or the failure in development may be complete and no union exist between the lateral nasal process of one side and the proximal surface of the fronto-nasal process, thereby producing a continuous cleft through the lip and through hard and soft palate. When the failure to develop is on both sides of the fronto-nasal process, then we have a double hare-lip and a V-shaped fissure through the vault of the mouth, and between the bifurcations of the V we find the undeveloped premaxillary nuclei, in which the incisor teeth are in time developed.

The failure in development and in attachment on both sides of the fronto-nasal process produces a hideous deformity. The patient I now bring before you presents such a condition.

C. A., a farmer's boy, nineteen years of age, coming

[1] E. B. Meyrowitz & Co., of 104 East Twenty-third Street, New York City, have kindly undertaken the manufacture of these tests, and have a most admirable, convenient, and cheap series ready for distribution.

[2] Read before the College of Physicians, Philadelphia, April 5, 1893.

from Virginia, presented himself to me in January, 1892; he was in reasonably good health; he had a double hare-lip, and a wide cleft in the soft and hard palate. The cleft bifurcated anteriorly, each bifurcation following the maxillo-premaxillary sutures. The vomer was greatly developed. The lower anterior marginal thickening coalesced with the premaxillary bones, which were pushed forward and upward. These parts were covered by a dense mass of vascular connective tissue.

FIG. 2.

FIG. 3.

The skin did not cover the anterior surface of the nasal septum, but projected forward, appearing like a well-developed nipple. There was an opening into each maxillary antrum. The entire lateral bony walls of the oro-nasal cavity were covered with a thick and very vascular integument, mucous membrane, connective tissue, and periosteum. The excessive vascularity in the whole field of operation was made very manifest in each operative procedure.

After several careful examinations, and after casts, diagrams, and photographs had been taken, I determined to first freshen the margin of the soft palate and then take lateral flaps containing periosteum from the lateral walls and suture these flaps together in the middle line as far forward as the maxillo-premaxillary sutures, leaving the treatment of the double hare-lip and the premaxillary bones and the greatly developed vomer for a future occasion. The antero-posterior diameter of the oral cavity was observed to be greater than usual. On the right side, the canine tooth, the two bicuspids, and two

FIG. 4.

FIG. 5.

molars were well developed, but they were placed in a straight line from before backward and outward. On the left side the second molar was absent, but the teeth on the left, like those on the right side, ranged in a straight line backward and outward, the two lines forming a V-shaped figure from before backward. The premaxillary bones, with the incisor teeth, were developed much in front of the apex of the V-shaped dental figure. Each half of the bifid uvula was larger than a normal uvula. The tensor palati and the levator palati muscles appeared to act with considerable force. The anterior pillars (palato-glossi) and the posterior pillars (palato-pharyngei) appeared to be subnormal.

A solution of cocaine was injected into the soft palate and into the parts covering the hard palate of each side of the fissure. The half-uvula of one side was seized with a long rat-tooth forceps and transfixed with a small double-edged, spear-shaped bistoury, and the incision carried up to a little nodule of bone, representing the undeveloped horizontal process of the palatine bone. A similar incision was then made upon the opposite side. Then, with a rectangular hoe-shaped knife, an incision was made along the lateral wall, and on a lateral ridge representing the undeveloped palatine process of the maxillary bone, and carried as far forward as the anterior edge of the nasal process of the maxillary bone and its juncture with the ala of the nose. The soft parts, including the periosteum, were brought down nearly to the margin of the alveolar process, thus leaving the flap attached by a large and broad pedicle. The same procedure was carried out on the opposite side. The hemorrhage was very considerable, but was arrested by ice and pressure. It required nine silver-wire sutures to hold the margins of these flaps in proper apposition in the middle line. The placing of the sutures was accomplished by means of a long needle with an eye at one end. This needle was thrust through the flap about one-quarter of an inch from its free margin and threaded from within, the wire being brought through the flap on the withdrawal of the needle; the needle then being thrust through the flap of the opposite side and threaded with the other end of the wire; then, withdrawing the needle, the wire was left in position. On drawing the edges of the flaps together a shot having a hole in it was run down the wire suture and compressed; the flaps were thus held well together. The making of the floor of the nose and the roof of the mouth was well accomplished by this procedure.

On washing out the nasal fossæ, none of the solution passed through the nasal floor to the mouth. The tension of the soft palate was now relieved by an incision on each side from above downward and obliquely outward, and at the same time from before backward diagonally through the soft palate. Pledgets of sterilized gauze were then placed in the nose and cotton over the middle facial zone. This completed the operation for the time and the patient was put to bed, and rectal alimentation was directed, with an anodyne.

After twenty-four hours had elapsed severe hemorrhage occurred, following a fit of coughing. After considerable difficulty this was arrestsd, and although the prostration was pronounced, the patient reacted rapidly.

On the fourth day three of the anterior sutures were removed and union was found to be complete. On the sixth day the three posterior sutures were removed and here union was also found to be complete. On the seventh day the remaining three sutures were taken out. It was found that one of them had cut out. It was from this spot that the bleeding had taken place. There was found to be an opening the size of a pea, where the suture had cut through. With the exception of this little opening, the union was perfect thoughout and the man was much improved. He went home in March. On his return, the last of January of this year, nearly ten months after the first operation, the parts were found to be well consolidated, and the small opening in the roof of his mouth had contracted a little.

While the fissure in the hard and soft palate was now closed, the facial deformity was still as great as ever. The second operation was performed early in February. Cocaine was injected into each lateral half of the lip. The parts were then dissected up from their attachment on each side to the maxillary bones, including the alæ

FIG. 6.

of the nose. It was found, however, that these flaps could not be made to cover the premaxillary bones; nor could these bones be forced back into the narrow cleft between the maxillary bones and into the narrow apex of the V-shaped figure already spoken of. With my bone-forceps the premaxillary bones and that portion of the vomer in front of the gap were removed. The anterior margin of the septum that I had made some months before was now freshened, and the canine teeth having been extracted, a rectangular flap from each side, having a broad pedicle carrying the periosteum, was raised and made to meet in the middle line in front of the lower angle of the vomer. These flaps were held to the vomer and in apposition to each other by animal sutures. The lip-flaps were now brought together in the middle line, and the parts were held in apposition by three steel pins.

The first pin was inserted into the cheek about a quarter of an inch external to the left ala nasi and passed nearly through the flap. It was then carried directly through the bony nasal septum and made to enter the right flap and reappear on the right cheek about a quarter of an inch external to the right ala nasi.

This pin held the flaps well together and in excellent apposition. A second and a third pin were properly passed through the lip-flaps. A well-sterilized silk ligature was now thrown around each individual pin in the manner of a figure-of 8, and a sterilized gauze dressing was placed over the naso-facial zone.

The pins were withdrawn on the fifth day, leaving the ligatures *in situ* for the time being. On the seventh day when all the dressing was removed, the parts were found entirely united. A fortnight after the operation a dental plate was adjusted, replacing the removed incisor teeth. A month after the last operation the man gave us the photograph which is here reproduced.

I am greatly indebted to Dr. Clarence A. Weaver, one of the resident physicians in Jefferson Medical College Hospital, for the photographs kindly furnished; and to Dr. E. I. Keffer for the preparation of the plaster cast from which one of the illustrations has been made.

1704 WALNUT STREET.

TWO CASES OF PNEUMONIA PRESENTING UNUSUAL FEATURES.[1]

BY LIEUT. A. E. BRADLEY,
ASSISTANT SURGEON, U. S. ARMY.

CASE I. *Pleuro-pneumonia of the lower lobe of the right lung, complicated with diaphragmatic empyema; convalescence established by expectoration of pus; cure complete.*—A. W., musician, Company C, Twelfth Infantry, after drinking heavily, was found lying in his bunk, apparently very ill, on the afternoon of March 10, 1893. Examination showed him to be in a semi-stupor from drink, and at the same time suffering severe pleuritic pain. He was at once removed to the hospital; the respirations were catching, jerky, and rapid; auscultation showed extensive friction-sounds over the base of the right lung, and faint crepitant râles; on percussion, a tympanitic quality of resonance was noted; tactile and vocal fremitus were apparently normal. The tongue was heavily coated. He was given 10 grains of calomel and 5 grains of soda, a broad bandage was firmly applied to the chest, and at night a hypodermatic injection of a quarter-grain of morphin was given. On the following morning his temperature had risen to 101.2°; the pain continued and the crepitant râles were more distinct. Three grains of quinin three times a day, and a stimulating, nourishing diet, were ordered. The evening temperature mounted to 101.8°.

On the following morning there was dulness on percussion over the whole lower lobe of the right lung, and rusty-colored, tenacious sputa caused much troublesome cough. Auscultation showed only faint, distant, bronchial breathing, but there was marked vocal and tactile fremitus. The tenacious mucus, no doubt, blocked the bronchial tubes and permitted little or no air to enter. In view of the coëxisting pleurisy, early recognized, the condition simulated to some extent a pleuritic effusion, but the fremitus pointed to little or no fluid in the pleural sac. The treatment was now ammonium carbonate, quinin, trincture of digitalis, and whiskey in such quantities and as frequently as the symptoms from time to time indicated.

On the morning of the 17th the temperature touched normal and convalescence seemed at hand, but physical examination still showed unsatisfactory conditions at the lower portion of the right chest. The chest-walls bulged, dulness on percussion existed, the respiratory sounds were distant, but there were no râles. It again seemed as if fluid were present, but exploratory punctures with hypodermatic and aspirating needles failed to give evidence of fluid. The general condition was excellent and the appetite good. On the 21st the temperature again began to indicate fever, and for the next two weeks it ranged from 100° to 103.2°. The presence of pus was suspected, and repeated attempts were made to locate it by means of exploratory punctures, but all failed. The line of percussion-dulness extended from the mid-axillary region forward and upward about 2½ inches above the normal line of liver-dulness.

During this period iodin was freely used locally, a supporting diet and internal medication carefully selected, and later on poultices were applied over the affected area. All attempts failed to locate pus, but the general condition and temperature pointed conclusively to infection at some point. It was concluded that a pocket existed in the diaphragmatic pleura, and, aside from occasional punctures in a vain attempt to withdraw or locate the pus, conservative treatment was adopted.

We were finally rewarded on April 7th, after a hectic condition of over two weeks, by the evacuation through the bronchi of the pus, which had so long been a source of trouble. During the first twenty-four hours no less than eight ounces were expectorated, but after this it appeared in ever-diminishing quantities, until finally, by the 15th of April, it was scarcely worthy of note, and had entirely ceased by the 20th. On April 7th the temperature was ranging from 99° to 102°, but from this time it steadily fell, and was normal when pus-expectoration ceased. During this period a supporting treatment was adopted, with local applications of iodin to the chest. Convalescence was rapid and uninterrupted. Before going to duty on May 11th the chest was given a careful examination, and, so far as could be determined, the cure was complete and no disability existed. The man went on six a months' furlough, and is at present visiting friends in Sweden.

This was without doubt a case of pneumonia-coccus, purulent pleurisy succeeding the attack of pneumonia. Some authorities state that there is reason to believe that in comparatively rare cases the pneumonia-coccus may reach the pleura through the lung, causing pleurisy, without inflaming the lung. Early in this case the most prominent features were symptoms of pleurisy; the pneumonia-cocci deposited in the pleural sac remained in a measure latent until defervescence showed the pulmonary inflammation to be at an end, when the germs assumed virulent activity, and in three days the symptoms gave unmistakable manifestations of pyogenia. Upon this subject there is an exceedingly interesting editorial article in the *Boston Medical and Surgical Journal*, May 25, 1893, vol. cxxviii, No. 21.

CASE II. *Pneumonia of the middle lobe of the righ lung; treatment by massive doses of digitalis for the first three days, which was then stopped; no cardiac effects were apparent until seven days after the first dose; digitalis-pulse for ten days; cure complete.* J. F. O., a private of Company B, Twelfth Infantry,

[1] Published by permission of the Surgeon-General, U. S. Army.

was admitted to hospital April 22, 1893, having had a chill the preceding day. Examination disclosed the usual symptoms of croupous pneumonia of the middle lobe of the right lung. The disease was confined entirely to this lobe, so far as could be determined by physical signs. During the first day the patient was given a mercurial purge and Dover's powder. On the following morning, May 23d, with his temperature 104.8°, the digitalis-treatment was instituted, in combination with chloral. He was ordered half an ounce of the infusion every hour, to be given until the temperature and respiration dropped to normal or nearly so. Chloral was given in 10-grain doses at intervals, to secure quiet and rest. Writers on this method of treatment uphold the fearless, bold administration of digitalis. In this case, after twenty-four doses, the temperature, on the morning of the 24th, had fallen to 101.8°. During this day the dose of digitalis was given every two hours. After twelve more doses the temperature at 8 A.M., the 25th, was 100°. The interval between doses was then increased to every three hours, and an evening temperature of 102.4° followed. On the 26th, at 8 A.M., the temperature had fallen to 99.2°, and the digitalis was stopped, and 5 grains of ammonium carbonate, a half-ounce of whiskey, and 3 grains of quinin were given three times daily.

With one exception to be noted, the convalescence was normal. During the time the digitalis was given the pulse was carefully watched, as being the indicator that would first announce a sufficiency of the drug. The pulse, during all the time the digitalis was exhibited and for three days after it had been stopped, presented no unusual features, not even a perceptible increase in tension. It is to be regretted that its frequency during these days was not recorded, but especial attention was paid to the pulse, and the first abnormal indication was discovered on April 26th, the morning of the crisis, and three days after the drug had been stopped. For several days the temperature was subnormal, as low at times as 97°, and from the 26th of April to the 7th of May the pulse was never more than 50 per minute, and was repeatedly found as slow as 36. It was really not until the 10th or the 11th of May that the normal frequency was established. During this period of subnormal temperature and pulse the condition of the patient was most encouraging; he seemed to be constantly improving, and suffered no ill-effects from the abnormal symptoms.

To epitomize: During the 23d, 24th, and 25th the patient took twenty-two ounces of infusion of digitalis; during these and the three subsequent days no effect on the pulse was apparent, though an undoubted effect was produced on the temperature.

On the morning of the 29th, three days after the exhibition of digitalis had been stopped, we had the characteristic slow, tense pulse of digitalis, and this persisted for ten days. To me this delayed and so-called cumulative action came as a considerable surprise, and for a time I was disinclined to ascribe the existing conditions to the drug employed.

In this connection I remember the case of a civilian teamster treated for pneumonia (not with digitalis) during the Pine Ridge troubles, in which the convalescence was marked by a persistent forty-per-minute pulse. In this instance the man claimed that this was his normal pulse-rate, but he insisted on leaving the hospital before his statement could be positively verified.

The patient in the case under consideration suffered no ill effects from the digitalis, except that after the second day it seemed to irritate his stomach and bowels, and it was for this reason that it was discontinued.

FORT SULLY, SOUTH DAKOTA.

TWO REMARKABLE CASES OF RECOVERY FROM POISONING—ONE BY OPIUM, THE OTHER BY CARBOLIC ACID.

BY ELIOT GORTON, M.D.,
ASSISTANT PHYSICIAN TO THE NEW JERSEY STATE HOSPITAL AT MORRIS PLAINS, N. J.

CASE I. OPIUM-POISONING.

ON the 13th of October, 1892, two of the male employés of the asylum, while on their way home from work, found a woman lying beside the road a short distance from the hospital, whom they recognized as one of our nurses. She seemed dazed and stupid, and as she could apparently neither walk nor talk, they carried her to the building, arriving at 6.30 P. M.

I saw the patient immediately, and found her in a semi-conscious condition, unable to stand or to talk coherently, although she moaned and cried out occasionally, as if in pain. Her pupils were strongly contracted, and this, in connection with the fact that I had treated her at different times for attacks of bilious colic, led me to believe that she had been overcome by one of these seizures, and, having resorted to opium in some form, had taken an overdose. In searching her, we found an almost empty bottle labeled "Laudanum."

The stomach-pump was used at once and the stomach found empty. However, apomorphin and brandy were administered hypodermatically, and the stomach was washed out with warm water. Retching occurred, but no vomiting. Strong coffee was then given, hypodermatic injections of brandy and one-thirtieth grain of atropin were administered freely, and the girl was forcibly held on her feet and kept moving. Flagellation with wet towels was also resorted to whenever the patient flagged, and as soon as those attending her were tired others took their places. At 10 P.M. these methods failed to be of use, and in spite of all efforts the patient became limp and unconscious. The face was cyanosed; the conjunctivæ injected; the pupils were the size of pin-points, and the respirations, which had been fairly good up to this time, fell to four per minute. The heart began to fail, and the extremities were cold. She was then placed in bed and twelve nurses, four at a time, relieved each other in applying massage. At 11 P.M. the respirations were three per minute, and the pulse, hardly perceptible at the wrist, was rapid and intermittent. Although we felt that we had a hopeless case to deal with, as a last resort the faradic battery was brought in operation, one electrode being placed at the diaphragm, the other over the phrenic nerve at the neck, with the result of increasing the respirations and relieving the heart for an hour, when this method became unsatisfactory, as the diaphragm failed to respond to the stimulation. At the suggestion of Dr. Prout, third assistant physician and pathologist, the electrodes were placed one over each phrenic nerve at the

point nearest to the surface where they pass in front of the scalenus anticus muscles, with a most gratifying and unlooked-for result. Respirations were increased or diminished at will, and immediately upon the contact of the electrode a full and forcible respiration occurred. At 1 A.M. the respirations had ceased entirely, except those produced by the strong electric current. The pupils were still contracted in spite of the one-thirtieth grain of atropin which had been given every half-hour since 10 P.M., and the patient was comatose. Dr. Prout and myself relieved each other at the battery every half-hour, and artificial respirations were kept up for six hours, or from 11 P.M. until 5 A.M., when our patient partly regained consciousness and the respiratory function became reëstablished. At the end of three days she was practically well, with the exception of an erythematous rash (probably due to the atropin) that covered her body and face, and which finally faded away. She stated that owing to some disagreement with her *fiancé*, she had taken the laudanum with suicidal intent.

The bottle bore the label of a firm well known to the profession for the purity and excellence of their preparations. She had taken ten drams of laudanum, U. S. P. strength, or the equivalent of five grains of morphin, as much if not more than that given to the unfortunate Helen Potts. It is my opinion that she owes her recovery to the massage and the battery, both of which were continued until she was out of danger.

The battery was a Jerome Kidder faradic, with Smee's cell, such as is figured and described in *Medical and Surgical Electricity*, by Beard and Rockwell, edition of 1883, p. 295.

I also desire to again call attention to the method of applying the electrodes, viz., one over each phrenic nerve at either side of the neck. There is no mention of such a method in any of our text-books which have come under my observation, nor have I ever seen any literature bearing upon their use in this manner. It certainly produced the desired effect, while the usual method of applying the electrodes to the nerve at the neck and the diaphragm failed. The normal number of respirations was produced for six hours consecutively, and the patient never failed to respond to the contact of the electrodes used in this manner.

CASE II. CARBOLIC ACID POISONING.

As if to illustrate the fact so often observed and commented upon by physicians, that one unusual case is commonly followed in a short time by another, on the 17th of October, or four days after the occurrence just detailed, at 7 A. M., it was reported to me that Mrs. S., a demented patient, had just taken a glassful of a carbolic acid solution. Bearing in mind the rapid diffusibility of this drug, no time was lost in getting to the ward with the necessary paraphernalia, and, though she was in a ward at the extreme end of the female department, probably not more than fifteen or twenty minutes elapsed from the time of taking the acid until active antidotal treatment was instituted.

The patient was found in a state of collapse, wholly unconscious, the pupils contracted, the face pallid, respirations short, shallow, and diminished in frequence, no pulse at the wrist and the heart-beats extremely intermittent and rapid. There would be several beats in rapid succession, then a pause of two seconds; then a single beat; then a few more beats and another pause, until it seemed that the heart would stop beating before any remedial measures could be applied. Apomorphin, one-sixth grain, and atropin, one-thirtieth grain, were given hypodermatically and the stomach-pump was used at once, though it was feared that the insertion of the tube would cut off breathing entirely. The stomach was thoroughly washed out with warm water, followed by the introduction of two quarts of water holding in solution four ounces of magnesium sulfate. At this time the apomorphin produced free emesis and the odor of the acid in the ejected fluid was very perceptible. Finally, two gallons of water in which a pound of magnesium sulfate had been dissolved were used as follows: the solution was pumped into the stomach until this became distended, when pressure upon it produced copious emesis; and this operation was continued until the circulation and respiration were restored and the patient regained consciousness. She was then put in bed, wrapped in flannel blankets, with bags of hot water to her feet and sides; a tablespoonful of brandy was given every hour, a tablespoonful of a saturated solution of magnesium sulfate every two hours until four doses had been taken, and the patient made a good recovery. Her throat was sore for several days, but, owing to the diluteness of the acid, no excoriation occurred. She swallowed eight ounces of a 2½ per cent. solution, or the equivalent of ninety-six grains of pure carbolic acid. This was not taken with suicidal intent. The nurse had been using the solution for disinfecting purposes, and inadvertently left the door of the wash-room open. The patient, desiring a drink of water, drank the glassful of the carbolic acid solution before the nurse noticed what she was doing.

No comments are necessary concerning these two cases. I consider the recoveries remarkable on account of the amount of poison ingested and the extreme gravity of the symptoms. They are illustrations of the results which can often be accomplished by the use of prompt, decisive, and continued measures, even when a case seems hopeless, and they also serve to emphasize the old adage: "While there is life there is hope."

For valuable and timely assistance in the management of the cases, I am indebted to the other members of the medical staff.

DEATH FROM NITROUS-OXID GAS.

BY FRANK J. THORNBURY, M.D.,
DEMONSTRATOR OF BACTERIOLOGY, UNIVERSITY OF BUFFALO, BUFFALO, NEW YORK.

NITROUS OXID (nitrogen monoxid, "laughing gas," protoxid of nitrogen) is a colorless, almost odorless gas, made by the distillation of ammonium nitrate at a temperature of from 460° to 480° F.

When pure nitrous-oxid gas is inhaled for from half a minute to three minutes, insensibility is produced, preceded in many instances by much excitement. Some persons under the influence of the gas sink quietly into unconsciousness, while others become hilarious, erotic, or pugnacious. During anesthesia from this agent, patients present evidence of asphyxia, although the phenomena of mechanical asphyxia are different from

those produced by nitrous-oxid gas. The cerebral pulsations are decidedly lessened and finally abolished, although the cerebral pressure is increased.

The causes of the effect of nitrous oxid upon the system are not positively understood; the phenomena produced seem to be due to deprivation of the blood of oxygen. One observer (Prof. Paul Bert), believing that the production or non-production of anesthesia by nitrous oxid is due to the tension of the gas in the blood, devised an apparatus by means of which the nitrous oxid could be administered to the patient mixed with an equal quantity of oxygen, under a pressure of at least two atmospheres; the result is said to be satisfactory. The method, although expensive and cumbersome, is much used in Paris. Smaller animals live in an atmosphere of nitrous-oxid gas for only short intervals, the time varying from thirty seconds for the mouse, to sixty minutes for the frog. All finally die of asphyxia. Life, however, can be sustained in the gas by introducing a quantity of oxygen, approximating that ordinarily contained in air.

The circulatory changes in asphyxia, due to deficient oxygenation of the blood, are at first peripheral. The dark, non-aërated blood refuses to circulate through the capillaries, and a damming back and subsequent paralysis of the heart take place. During nitrous-oxid narcosis the amount of carbon dioxid exhaled from the lungs is much below the normal. This anesthetic has been administered to hundreds of thousands of cases and but very few deaths are recorded. Only two or three fatal cases are mentioned in most of our standard text-books. The administration by means of an India-rubber bag containing at least eight gallons is the preferable method. The mouth-piece should contain two valves so that the expired gas is thrown out into the air and not back again into the bag.

Following this prelude to the use of nitrous oxid, I desire to make a brief report of an autopsy, made May 1st, for the Coroners of Erie county, upon a woman who died after the administration of four gallons of nitrous oxid by a dentist for the extraction of four teeth. Soon after the induction of anesthesia, the patient began to show signs of embarrassed breathing. Medical consultants were summoned. The pulse became rapid and attempts at breathing spasmodic. Artificial respiration was resorted to; the lower extremities were elevated. Nitro-glycerin, gr. $\frac{1}{100}$, was administered hypodermatically, and ammonia applied to the nostrils. The patient seemed to rally for a short time, but unconsciousness continued; the pulse became more rapid and feeble, and the heart's action finally ceased.

The report of the autopsy was as follows: The body is that of a middle-aged female, fairly developed and poorly nourished. Post-mortem rigidity is slight. Post-mortem staining is present over the pendant portions of the body. The ears are filled with cotton. The median incision shows the subcutaneous fat to be small in amount. No pleuritic adhesions exist in the thorax. The right lung weighs sixteen ounces, is universally congested and edematous; there is exudation of a large quantity of frothy serum. The left lung weighs thirteen and a half ounces, and is also congested and edematous. The lining membrane of the bronchi upon both sides are intensely hyperemic, and the tubes partially filled with frothy exudate. The heart weighs ten ounces and is of normal size and color. The ventricles are firmly contracted, and the walls of the left ventricle are slightly thickened. There is a dark clot in the chorda of the mitral valve. There are three minute atheromatous areas on the posterior wall of the aorta just above the segments of the valve. Over the anterior surface of the esophagus are two areas of hemorrhagic extravasation, irregular in outline and about the size of a half-dollar. The tracheal mucosa is heavily coated by a frothy, removable mucus. The larynx is congested and the lining membrane is also covered with frothy, slightly blood-tinged mucus. The congestion is especially marked in and just below the ventricles. The aryteno-epiglottidean folds are considerably corrugated, suggesting preëxisting edema. The position of the viscera is normal. The spleen is dark, moderately firm, normal in size and in consistency. The kidneys show a dark-bluish discoloration; the surface is smooth, the capsule non-adherent. The right is slightly smaller than the left, and contains a blood-clot beneath the mucosa of the pelvis and the true renal substance. This clot occupied an area one-half a square decimeter in extent. The ureters are normal and the bladder empty. No urine was obtained for analysis. The liver is normal, its weight three pounds. The stomach is normal in size and contains about six ounces of partially-digested food. The mucous membrane is coated with thick, semi-tenacious mucus; the membrane is slightly slate-colored in appearance. The intestines are normal. The uterus shows catarrhal endometritis, and there is a small quantity of mucus in its cavity. The left ovary shows a very recent corpus luteum and there is also a small cyst present. No adhesions exist. The right ovary and the tubes are normal. The brain was not examined owing to inability to obtain the consent of the Coroner.

This case illustrates the invariable presence of danger in the administration of anesthetics, even of the supposed harmless "laughing gas."

On the grounds of the pathology the use of oxygen in the treatment seems indicated, the condition of asphyxia, as shown, being due to the deprivation of the blood of oxygen.

MEDICAL PROGRESS.

Osteomalacia during Pregnancy; Porro Operation; New After-treatment.—SEELIGMAN (*Centralblatt für Gynäkologie*, 1893, No. 28, p. 649) has reported the case of a woman, thirty-seven years old, who, married for fifteen years, had been pregnant twelve times, seven children having been carried to term and five miscarriages having taken place. The hygienic surroundings of the family were ordinarily good. The children were usually kept at the breast for periods varying from ten months to two years, so that a new pregnancy took place before the preceding lactation was terminated. During the eighth pregnancy, which terminated in the birth of the fifth child, the woman began to complain of pain in the pelvic bones, extending thence to the upper and lower extremities and interfering with her ability to get about. Notwithstanding her deplorable condition, she conceived four times in the following seven years, bearing two living children and aborting twice. The last child was delivered by means of version and extraction, and

died soon after birth. The condition of the patient now became even worse than it had been. While dragging about upon crutches she fell and fractured the right thigh in its upper third. Shortly afterward the woman became pregnant for the eleventh time, and aborted at three months. She now fell into the hands of a so-called "wise woman," who applied one hundred leeches to different parts of the body, withdrawing a large amount of blood. Some time after this she became pregnant for the twelfth time. When seen, in about the thirty-fourth week of pregnancy, the woman was greatly emaciated and deformed. The right leg measured some two inches less than the left. The abdomen was prominent, and there existed a kyphoscoliosis dextra in the dorsal region and a decided lordosis in the lumbar region. The child occupied an oblique position in the pelvis, with the head to the right and the back anteriorly. The urine contained a trace of albumin, but no sugar. The distance between the iliac spines was 9.6 inches; between the iliac crests, 12.1; between the trochanters, 12.5. The external conjugate measured 7.4 inches. The pelvis, on examination, proved to be a typically osteomalacic one. The horizontal and descending rami of the pubes were approximated and the pubic arch presented a figure-of-8 shape, the sacral promontory projecting into the cavity of the pelvis. The symphysis projected forward and the diagonal conjugate measured 3.1 inches. The pelvic outlet just permitted the passage of two fingers. It was determined to perform celiotomy and remove the uterus and its appendages. As cholera was prevalent at the time, the operation had to be performed under unfavorable conditions at the woman's home. The woman suffered so much pain upon even the slightest manipulation that the preparatory bath had to be foregone. The operation was unattended with difficulty. The uterine stump was treated extra-peritoneally. Primary union took place without complication. The child also did well. As, according to the general consensus of opinion, it was to be expected that the pains would cease and the bones begin to become hard soon after the operation, it was decided to attempt to improve the woman's condition by extension of the whole body, and the results amply justified the attempt. At the end of eight weeks the size of the woman had actually been increased seven inches, and the right lower extremity was almost as long as the left. The configuration of the pelvis also underwent a change for the better. The diagonal conjugate was increased in size from 3.1 to 3.5 inches. The excessive spinal curvature was almost entirely overcome. From having been a helpless invalid the woman was able to resume her household duties.

Profound Cerebral Symptoms in Adults from Indigestion.—That profound cerebral symptoms may appear in adults, as well as in children, as the result of errors in diet, is well illustrated by two cases recorded by CORTIAL (*Archives de Méd. et de Pharm. Milit.*, 1893, p. No. 7, 56). One occurred in a man, twenty-three years old, who fell unconscious upon the street and was thought to have suffered a cerebral hemorrhage. About six ounces of blood were withdrawn and an ice-bag was applied to the head. All four members were agitated by movement, which was a little more marked upon the right than upon the left; the head was in constant motion; the eyes were turned upward and inward; the pupils were contracted; trismus was present; the pulse was rapid and regular; fever was moderate. The sphincters were continent; there was no hemiplegia. The stomach was distended and, notwithstanding the state of consciousness, pressure evidently induced pain. As cerebral hemorrhage is exceptional in young persons, alcoholism, indigestion, insolation, and heat-exhaustion were considered. The evidence pointed to indigestion as the cause of the symptoms and, accordingly, a further bleeding of ten ounces was practised; dessertspoonful doses of infusion of tea were administered; a purgative enema of senna was given; the epigastric region was gently cauterized; and massage of the abdomen was from time to time performed. In a short while the patient began to vomit, bringing up the remains of some salad taken the day before; copious stools also followed. Consciousness was only gradually resumed. It was, however, two weeks before the man was quite restored. He related that he had not been exposed to the sun or to intense heat, but that on the day before his attack he had partaken of some salad, and that on the day of the attack he had eaten nothing, on account of a severe headache and a feeling of malaise.

The second case occurred in a vigorous man, twenty-six years old, who was found unconscious, with eyes fixed; pupils contracted; respiration deep and a little stertorous; marked agitation of all four members, but especially upon the right, and without contracture; full but not rapid pulse; warm skin and hot head. He had been in good general health, suffering, however, with an attack of migraine about once a week. On three successive days there had been epistaxis. Stool had been painful and difficult. The man had gone to bed without making complaint, but toward midnight he was heard to groan, and then was found unconscious and in active convulsive movement. Other attacks occurred and were seen to be epileptiform in character. The parents asserted that the man had never had such attacks before. Indigestion being suspected, examination showed the abdomen to be distended and the percussion-note over the stomach to be dull. Strong pressure in the epigastrium appeared to induce pain and to excite a convulsion. After a bleeding of sixteen ounces the patient opened his eyes and became conscious. Abundant vomiting followed the ingestion of several cups of weak infusion of tea, bringing up imperfectly masticated meat. Purgatives were also administered, and in the course of a few days the patient was restored to his usual health. The distinguishing features of cases in which indigestion gives rise to cerebral symptoms are the fulness of the abdomen, with pain on deep pressure, and absence of modification of the respiration.

The Control of Hemorrhage from the Liver.—SMITS (*Geneesk. Tydschr. voor N. Indie*, B. xxxiii, H. 1; *Centralbl. f. Chirurgie*, No. 28, p. 622) has reported the case of a Malay, eighty years old, who was brought into the hospital apathetic and unconscious, presenting evidences of profound anemia. Below the ensiform cartilage and a short distance from the median line, on a level with the seventh and eighth ribs and parallel with the costal margin, there was an everted penetrating wound, about three and one-third inches long, from

which a steady stream of dark-red blood constantly flowed. There was no evidence of thoracic or abdominal complication. As the conditions indicated an injury of the liver, the outer wound was enlarged, and a wound a little more than an inch long and parallel with the external wound, was found in the liver, from which the dark-colored blood escaped. By means of a "mattress suture" the wound in the liver was readily closed with chromicized catgut, only so much of the blood-clots present being removed as interfered with accurate approximation. When it was seen that no further blood escaped from the liver the margins of the peritoneum were approximated with catgut and the skin-flaps with silk. Drainage was not deemed necessary. In addition, auto-transfusion was practised and stimulants were administered. The further course of the case was uneventful. The wound had healed at the end of eleven days, and in ten days more the patient was dismissed. In an ape upon which an aseptic celiotomy was performed it was possible to check the parenchymatous hemorrhage from the liver resulting from the excision of a wedge-shaped piece of tissue in the same way. The larger vessels were caught with forceps and ligated. It is thought that previous failures in suturing the liver may have been due to the fact that only healthy liver-tissue is suitable for this manipulation; a good result cannot be looked for if the liver be infiltrated, or syphilitic, or otherwise degenerated.

Generalized Melanotic Carcinoma.—LANDOWSKI (*Bull. de la Soc. Anat. de Paris*, tome vii, fasc. 15, p. 371) has reported the case of a woman, fifty-seven years old, who during life presented upon the skin in various situations small nodules of rapid evolution and of indubitably malignant character, death taking place amid the symptoms of cerebral hemorrhage. At the post-mortem examination nodules were also found in the pericardium, in the myocardium, in the kidneys, in the thyroid gland, and at the hilum of the lungs. The supra-renal capsules were greatly enlarged. There were small tumors in the mesentery, some of which, situated in the intestinal border, had ulcerated into the bowel. Tumors were also found in the course of all of the large vessels. The liver was intensely pigmented. Microscopically the new-growth presented the histologic appearances of melanotic carcinoma. The cerebral hemorrhage appeared to bear no relation to the carcinomatous diathesis, although the entire brain was dissected with great care.

To Sterilize New Cover-glasses ZETTNOW (*Centralbl. für Bakteriologie und Parasitenk.*, Bd. xiv, No. 2, 3, p. 63) has found it best, after having cleansed them, to place them upon a piece of sheet-iron, some three or four inches square, held for several minutes over the flame of a Bunsen burner. Thus treated, the glasses will not break. A dozen or fifteen can be sterilized in this way at one time. A copper plate will not answer, as the copper oxid developed by the heat would combine with the glass.

THERAPEUTIC NOTES.

Fatal Intoxication with Eucalyptus.—NEALE (*Australasian Medical Gazette*, April, 1893; *Practitioner*, No. 302, p. 129) has reported the case of a boy, ten years old, who took an ounce of oil of eucalyptus, and shortly afterward was found gasping for breath; he then vomited, with relief, and breathed well for an hour; but the struggle for breathing gradually returned and increased until death took place. Vomiting occurred but once, and there was no purging and no convulsion. The boy got out of bed, after vomiting, to take a drink of water; he spoke rationally up to within an hour of his death; and once he complained of pain in the right axillary region, which was relieved by a poultice. At the post-mortem examination the stomach was found greatly distended with gas. It contained a small amount of thick, yellow, odorless fluid. Its outer surface was white, except where it was stained by contact with the spleen; the inner surface was white, thickened, and puckered, as if painted with a mild solution of carbolic acid, but not brittle. The liver, kidneys, and spleen appeared healthy. The pleural cavities contained a quart of bloody serum. The lungs were compressed. The right heart contained frothy liquid blood; the left was empty and contracted. The brain was soft and pulpy; the membranes full of blood.

The Treatment of Erysipelas.—KOLACZEK (*Centralbl. für Chirurgie*, 1893, No. 28, p. 601) calls attention to the advantage of an occlusive dressing in the treatment of erysipelas, particularly as seen in surgical practice. For this purpose he employs what he designates as "rubber paper," which, at first, he moistened with a 5 per cent. solution of carbolic acid and had extend well beyond the margins of the affected surface. Latterly he has discarded the use of carbolic acid in this connection, as he found that it caused the paper to adhere to the skin to which it had been applied, so that its removal was attended with difficulty and distress. Over the dressing is placed a compress of cotton and a firm bandage. The dressing is changed after the lapse of twenty-four hours and a larger piece of rubber or additional strips are applied if the process has extended. The efficacy of the treatment is supposed to depend upon the suppression of the perspiration that results, the unexcreted metabolic products being thought to have a destructive or inhibitive action upon the streptococci. The success of the procedure depends upon the accuracy of the approximation of the dressing to the surface.

Salacetol is the name given by BOURGET (*La Semaine Médicale*, 1893, No. 41, p. 328) to a synthetic product consisting of 75 per cent. of salicylic acid and 25 per cent. of acetol. It is said to possess the intestinal antiseptic virtues of salol, without its disadvantages, and particularly its toxicity, which is dependent upon the carbolic acid that it contains. Given with castor oil, in the proportion of 30 or 45 grains to the ounce, it has proved useful in the treatment of summer diarrheas, choleriform affections, and cholera nostras. An adult may take the entire amount once daily, and repeat it if necessary. Children will take correspondingly smaller doses. Salacetol has also proved useful as a disinfectant for the genito-urinary tract, as well as in cases of subacute rheumatism and gout. The combination with castor oil increases its efficacy by inducing abundant secretion of the alkaline intestinal juices, thereby facilitating the decomposition of the drug.

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MEDICAL WRITING FOR ADVERTISING PURPOSES.

A DISTINCTION is readily made between medical writing, according as it is designed for the lay-press and lay-reader, or for the medical press and the professional reader. THE NEWS has contended that it is the duty of medical men to instruct the lay-world, through the lay-journal, concerning hygienic and medical truth. In so doing, however, there is great danger that the pure motive of public instruction may be debased by the alloy of self-seeking, and the writer descend to the moral level of the scamp who himself writes or suggests to the reportorial tool the "puffs" of himself, his goings and comings, his success in treatment, his appointments to positions, etc. All human acts are to be judged by the motive of the actor. Somehow or other the motive will become manifest. The self-advertiser loses delicacy of perception, tact, the little sense of modesty he ever possessed, and he more and more unconsciously sticks his cloven foot in the view of the whole world—that world that is growing ever more expert in the detection of Mephistophelean feet!

The medical writer in the professional journal is also to be judged by his motive, but his judges here, being his equals and more expert, more readily detect the ill-concealed marks of cunning and the secret desire to attract attention to the writer, while pretending to direct attention to the thing written. No one sees this unconscious display of motive so quickly as the pitiable (but never pitied) conscientious medical editor. This is partly owing to the fact that with him it is a matter of much experience, and partly also that it is his chief duty, in the interest of his readers, to thus discriminate between worthy and worthless writing. The advertiser, however, also often naïvely enough tells his own secret to the editor, for example, by insisting on the insertion of illustrations that do not illustrate, and that are designed simply to attract attention. The lay-newspapers are nowadays greatly exercised as to the insertion of cheap and worthless cuts, those journals which appeal to the most unintellectual readers finding it necessary to give the greatest number of worthless and untrue pictures.

It is a settled policy of the medical self-advertiser to write a certain number of books or articles each year, absolutely regardless of whether he has anything new to say, or whether what he says may be valuable or valueless to the profession. The editorial quandary is greatest in those rare cases in which the writer's motive is plainly selfish, as evidenced by the title, methods of expression, the insertion of egotistic and irrelative details, etc., but when also there is really something professionally instructive or interesting behind the tricksiness of conceit and advertisiness. Intellect and lack of principle are sometimes to be found in one individual, but the latter quality generally soon gets the upper hand.

When the medical advertiser writes an article for the lay-public for the purpose of attracting attention to himself, the fraud becomes manifest to his equals because the glitter of the born quack shines through every word. It is an appeal direct for patients. When he writes for the medical journals it is an appeal indirect for consultations and reference-cases. These appealers, therefore, are largely composed of professors and specialists, who want to "strike" the general physician or the specialists in other departments. It happens also that the ambitious use this means of calling attention to self simply to gain hospital-appointments, to secure professional positions, or to justify themselves before the world when such positions have been politically gained and the self-boomer knows himself that he has neither the requisite intellect, the adequate medical knowledge,

nor the clinical experience for such a position. Books and articles must be written to prove that the lie is not a lie.

And the writing of books and articles—what an easy matter for an expert! There are several methods:

There is, for example, the stolen patchwork method, which consists in cribbing from half a dozen or more authors or encyclopedias the data and ideas, so changed, of course, in language that no one can recognize the sources, and padded dextrously with assertions of personal experience, or with random bits of dogmatism, disagreements from the statements of this or that other writer, etc.—the whole thing not only medically valueless, but leading the trustful and ignorant into mistake and error.

Another common method is to hire for money or promise of preferment the brains of assistants and of those without practice, using the scholarship and the work of others as one's own. This has been a remarkably successful way in the past, but it is to be hoped that it is soon to become "stale, flat, and unprofitable."

Still another way is to build upon the apex of a cone of personal experience, used as a base, a very top-heavy superstructure of silly egotism and exaggeration. Last year, for instance, at a meeting of physicians in an Eastern city, an essayist, apparently to clinch a point as to the rarity of a certain pathologic condition, emphasized the fact that "in the one or two hundred beds under his care, and the three hundred and fifty dispensary cases daily seen by him," etc. Everyone smiled or sneered at the statement, knowing that it was introduced from no interest in the disease, but from much interest in the introducer. In two seconds everyone made the mental calculation that DR. HORNBLOWER saw something like a patient a minute for six or seven hours each day, or two patients a minute for three hours, and that the dispensary visits in that city numbered several millions annually.

Good medical writing is either a laborious digestion and epitomization of the medical experience of others, honest credit being given, or it is a concise setting forth in truthful, modest phrase of the sifted results of one's own clinical experience. Let us have more good medical writing for the sake of the profession and humanity, and less of sham medical writing for the sake of money-getting, thimble-rigging, and advertising!

APYRETIC INFECTIOUS ENDOCARDITIS.

A SHORT time ago (see THE NEWS, May 13, 1893, p. 521) we took occasion to advert to the occurrence of enteric fever without pyrexia. The obvious inference to be drawn from the admission of such an event is that other infectious processes may likewise pursue their course without elevation of temperature. As if in confirmation of such an assumption comes the report by SARDA and BOTHEZAT (*Nouveau Montpellier Médical*, 1893, No. 26, p. 511), of the case of a man in which, in the midst of an acute illness of ill-defined character, attended with anorexia, diarrhea, vertigo, headache, and insomnia, there developed gelatinous edema of the anterior thoracic wall, together with a systolic endocardial murmur heard over the left ventricle and not propagated. In the pulmonary area a duplication of the second sound was heard, which was attributed to a circumscribed dry pericarditis. Great weakness, with a typhoid state, supervened. In the course of the illness small quantities of albumin appeared in the urine, which was excreted in small amount and proved to be actively urotoxic. Examination of the blood disclosed the presence of diplococci. The patient became convalescent after the illness had existed for six weeks, and was lost to observation. There will, no doubt, be skeptics who, in the absence of post-mortem demonstration, will look with suspicion upon the accuracy of the diagnosis of infectious endocarditis made in this case, but it must be urged that there can be no substantial ground for such a position, as the competency and fidelity of the observers must be admitted, and as, besides, there is something in the *tout ensemble* of a case as seen at the bedside that cannot be reproduced in a clinical report. Granting, then, the accuracy of the observation, we are at once confronted with the difficulty of an explanation of the anomalous occurrence; for we know too little, as yet, of the temperature-regulating mechanism of the animal organism to adduce an explanation susceptible of demonstration. Speculating within what seem reasonable bounds, it may be that under certain conditions of infection toxic products are generated that do not act upon the heat-regulating mechanism in the same way as other toxic products usually do; so that in the one case we have an absence, in the other the presence of fever.

In further confirmation of the position here taken it is interesting to note that COMBEMALE (*Gaz. hebd.*

de Méd. et de Chir., 1893, No. 30, p. 352) has just reported two fatal cases of typhus fever, in both of which a transitory elevation of temperature was followed by persistent depression below the normal. He offers the alternative explanation of a toxic inhibition of the thermogenic centers in the brain or medulla, or the development of a toxic or infectious nephritis.

Finally, although we may not be able to give the explanation, it is well for the clinician, in fact it is incumbent upon him, to recognize that infectious processes may pursue their course and even lead to a fatal termination in the absence of all elevation of temperature; so that the absence of pyrexia need not be a bar to the diagnosis of an infectious disease.

"TO PREVENT THE SPREAD OF CONSUMPTION."

DR. DELANCEY ROCHESTER, a physician of Buffalo, N. Y., has adopted a method in preventive medicine and popular instruction that shows him to be a true-hearted and clear-headed physician. To the patient and to his friends in every case of pulmonary tuberculosis to which he is called he gives copies of a little printed slip, always carried in the pocket for the purpose, which reads as follows:

DIRECTIONS TO PREVENT THE SPREAD OF CONSUMPTION.

Consumption is an infectious disease, *i. e.*, it can be communicated to a person previously well by one who is suffering from the disease.

The agent of infection exists in the breath, to a limited degree, in the urine, the evacuations from the bowels, and the sweat in many cases, in whatever may be vomited, but *most of all* in the material that is *coughed up and spit out.*

As long as these materials are kept moist there is no danger of infection, unless they are brought into direct contact with the mouth, nose, eyes, or other mucous surface, or an open wound or scratch. If they dry on the clothing, on handkerchiefs, in a cup or spittoon, or other vessel, or on the floor or walls, they become disseminated through the air as minute particles of dust, and as such may be breathed in by a healthy individual, who thus runs the risk of infection.

Consequently, the underclothing and bedclothing of the consumptive should be changed at least twice a week (more often if the patient sweats much), and those articles of clothing taken off should be boiled for a half-hour before they are washed; the movements from the bowels should be passed into vessels containing water, and these vessels, as well as those into which the urine may be passed, should be thoroughly cleansed with boiling water; the sputum should never be expectorated into a handkerchief or other cloth upon which it might become dried, or upon the floor, walls, or sidewalk, but always into a cup or other suitable vessel containing water, which is kept covered when not in actual use; if the patient is walking about, a wide-mouthed bottle, containing some water and securely corked, can be carried in the pocket and used when necessary; the sputum thus collected should be emptied from the vessel three or four times in the twenty-four hours, and *immediately* burned; the vessel and its cover, or stopper, should each time be thoroughly cleansed with boiling water; the table utensils, including the napkin, of the patient should be thoroughly boiled before being otherwise washed; the mouth, nose, and throat of the patient should be thoroughly cleansed, at least twice daily, with a cleansing solution made by dissolving one teaspoonful of sodium bicarbonate (saleratus) in one-half pint of warm water. The well members of the family should not kiss the patient on the mouth; and under no circumstances should any one of them sleep in the same bed with the patient. The patient's room should be thoroughly ventilated and should never be tightly shut up; it should also be as sunny a room as possible.

We present this medical missionary tract in order to solicit suggestions of changes or additions that may seem wise on the part of our readers, and also to say that if a sufficient number of advance orders are forwarded to THE NEWS we will have a large number of the tracts printed at the cheapest rate possible, and will supply physicians with them at the inconsiderable cost of printing. We urge a hearty acceptance of the plan, as it is at once in the interest of true humanity and of a better understanding on the part of the community of the real spirit actuating the medical profession.

EDITORIAL COMMENTS.

The Association of Posterior Spinal Sclerosis and Exophthalmic Goiter.—Although exophthalmic goiter is far from being a rare disease, and although it has received a good deal of attention and study, both clinically and pathologically, there is as yet a lack of crystallized opinion as to its morbid anatomy. The lesions found in the fatal cases in which post-mortem examinations have been made have not been uniform, nor always significant; while the perfect recovery that takes place in some instances demonstrates that organic changes are not always present. It is just here that the pathologic classification of disease of the nervous system into functional, nutritional, structural, and organic, proposed by Gowers, finds appropriate application. Upon this basis it can be readily understood how in a disease like exophthalmic goiter, at first purely functional, nutritional changes may follow, and these in turn give rise to structural alterations, if the morbid tendency be not checked or eradicated. Thus it is that in some cases palpable changes are found after death, while in other cases no lesion is demonstrable. This conception will also shed some light upon the occasional association of exophthalmic goiter with other structural diseases of the nervous system, an association that is not to be looked upon as merely accidental, but dependent upon community of cause or community of predisposition. Records of cases

are not wanting in which exophthalmic goiter has been thus associated. For instance, THE NEWS of May 7, 1892, p. 520, contains a reference to a case of exophthalmic goiter, in which after death atrophy of the left restiform body and of the right solitary fasciculus was found; and THE NEWS of August 20, 1892, p. 214, contains the report of a case of exophthalmic goiter attended with incipient posterior spinal sclerosis. Recently MARIE and MARINESCO (*Revue Neurologique*, 1893, No. 10, p. 250; *Gaz. hebd. de Méd. et de Chir.*, 1893, No. 30, p. 354) report the case of a woman, thirty-six years old, who thirteen years previously had suffered with lightning-pains, followed successively by motor ataxia, laryngeal crises, diplopia, and gastric crises. Upon examination there was also found exophthalmos, with imperfect descent of the upper lid in association with the downward glance of the eye, tachycardia, and tremor, but without appreciable enlargement of the thyroid gland. There were present, besides, symptoms of posterior spinal sclerosis, with abolition of the knee-jerks. The woman died in an epileptiform crisis, and at the post-mortem examination, in addition to changes in the thyroid gland and the characteristic lesions of posterior spinal sclerosis, there was found symmetric sclerosis of the solitary fasciculus of the medulla and of the root of the trigeminal nerve. The opinion is further expressed that the bulbar theory of the etiology of exophthalmic goiter is the most reasonable.

Homeopathic and Faith-cure Statistics.—The *People's Health Journal*, a homeopathic journal of Chicago, publishes an exhaustive report of an exhaustive investigation by an exhausting homeopath, of the comparative statistics of homeopathy and "allopathy" as to the relative success in the chief American cities in the cure of disease. Of course, in every instance the poor "allopath" comes out with a sorry showing. The percentage of cures of the successful homeopaths should convince a doubting world, if figures could do it, and should make us hang our heads in bitter shame. Three simple facts, however, should be noted: 1. An attack of "spring fever" is not, by an honest man, diagnosticated as typhoid fever, nor every case of "sore-throat" classed as "diphtheria." Cure is easy and statistics cheap under such classification. 2. To have any value statistics must be gathered by impartial men, not by partisans. 3. No statistics exist, or by any stretch of sane imaginations can be supposed to exist, at the present time whereon to base such conclusions or any conclusions whatever. "Figgers won't lie, but figgerers will."

The homeopaths' half-sisters, the faith-curists, have also been holding a convention (conventions are fashionable nowadays), and had also their own splendid array of statistics. The *Boston Medical and Surgical Journal* says of these statistics:

"Out of two hundred cures reported, of thirty patients a diagnosis of organic disease had been made, and there were the usual number of fractures which had been marvellously reunited by faith. There was no record made, however, as to the subsequent position and deformity. The time of this method of cure appears to be much shorter than that required by surgical means—as one case of a broken ankle was said to have been cured in five minutes.

"The greatest curative effect of faith seemed to be upon erysipelas, for one hundred cases of speedy cures were reported. In what way the streptococcus is affected by a profession of faith was not clearly explained.

"The only case not curable by this means appeared to be rupture of the heart; for one person testified that by faith his child had been cured of colic, and a daughter of pneumonia. Their little one had been taken from them, but not by sickness; he died of a broken heart."

The Diagnostic Significance of Herpes Labialis.—Herpes of the lips is a symptom not uncommonly encountered in the course of an attack of cerebro-spinal meningitis and is considered of rather favorable omen in those cases in which it appears. It occurs much more commonly in the epidemic variety of meningeal inflammation than in the tuberculous variety. A series of observations by FELIX KLEMPERER (*Berliner klinische Wochenschrift*, 1893, No. 29, p. 693), at Strassburg, would seem to indicate that some degree of confidence can be placed upon the diagnostic significance of this phenomenon in the differentiation of these two forms of meningitis. He reports three cases in which, by reason of the family history and other attendant circumstances, there was reason to suspect the existence of tuberculous meningitis, but in two of which recovery presumably, and a post-mortem examination in one that terminated fatally actually, negatived such a diagnosis. Examination of the contents of the vesicles in two of these cases and in nineteen others disclosed the presence of pneumonia-cocci, staphylococci, and streptococci, respectively, in individual instances. The inference would thus seem reasonable that the organisms found may be looked upon as the cause of the formation of the vesicles, and the thought further suggests itself that they may be the same as those that are responsible for the primary affection with which the herpes happens to be associated. As herpes is of common occurrence in the course of diseases attended primarily or secondarily with the presence of micrococci, and is of rare occurrence in association with diseases dependent upon specific micro-organisms, it would seem that the appearance of the vesicles upon the lips may be considered among the points of discrimination in differentiating between the epidemic and the tuberculous form of cerebro-spinal meningitis.

Quackery and Lottery-gambling Join Hands.—In the *Christian Statesman* of July 29, Mr. Josiah W. Leeds gives a description of an advertising dodge devised by "The World's Dispensary" of Buffalo, N. Y. The scheme is so framed that it may possibly avoid the letter of the law, but if successful it is all the more nefarious. The Postmaster-General should look to it. It is proposed to distribute $10,000 in prizes among certain lucky holders of an advertising pamphlet of the *World's Expensary*. Mr. Leeds succeeded in arousing the manager of a general advertising company to a knowledge of the nature of the humbug, but could get no reply from the Chatham National Bank of New York, which seemed to be acting the part of bankers for the business. It is also to be gratefully noted that the *Christian Statesman* is *one* instance of a religious newspaper that will not admit the patent (which means, *not-patent*) mediciners to its ad-

vertising pages. The *Christian Standard*, the *Friend's Review*, and the *Christian Worker* are others, as we learn upon going to press. Is there another in the United States? If so, we wish to honor it!

The Oculist and the Trader.—A dealer in artificial eyes called upon an ophthalmic surgeon and said: "I came to thank you for sending me three of your patients, whom I have fitted with artificial eyes, and to give you the amount (five dollars for each case), as is my custom. . . . You will not take it? But Dr. Greatman, and Professor Expert, and Dr. Success do so—why should not you?"

The optician also called and introduced himself as a wholesale dealer, with the proposition to save the patient much money, and also to pay the physician 25 per cent. of the gross proceeds from the sale of spectacles. Again it was asserted that Dr. So-and-so, and that even such-and-such a hospital was pursuing this plan. It had, of course, never entered the mind of the trader that the manufacture and adjustment of spectacles is a science and an art, perfection in which requires years of study and experience, a conscience, and an intelligence begotten by no simple love of money, and he was, or pretended to be, equally unconscious of the perfect immorality of the proceeding.

Appendicitis in the Negro?—A valued contributor of THE NEWS, one of America's foremost surgeons, writes to ask if the negro is subject to appendicitis. He says:

"In common with other surgeons, I have had my share of cases, and have performed a number of operations, with a *very liberal* percentage of deaths; but I do not call to mind, nor can I learn of anyone of my Southern confrères who has seen the trouble in the black man. In days gone by, when I was in general medical practice and living in a population where there were large numbers of negroes, I do not think I have ever met, and I am certain I never recognized, a single case of disease in the region of the colon in the black man. This is a fact of which I have not seen any mention; and since the operation has been performed oftener at the North than at the South, it is questionable whether it has been thought of by any surgeon there."

We should be glad to record the results of experience in this connection.

Castration for Rape is not a new proposition, but, in view of the horrible prevalence of lynch-law in certain parts of the United States, it becomes a question if the procedure should not be given the sanction of good law-courts as well as that of the court presided over by the ferocious Judge Lynch. A correspondent in THE NEWS of April 30, 1892, proposes castration as a proper substitute for capital punishment. In such a suggestion there is no attempt to "make the punishment fit the crime," but for heinous sexual crimes castration would appear appropriate and logical. There is, however, a class of criminals, that will possibly be made more vindictive by any punishment, and especially by this form of it, and harbor a revenge perhaps more ineradicable than before against society. Then, too, a criminal thus punished has only to move to a part of the country where he is not known to escape knowledge of his mutilation. But, after all, the plan seems worthy of a trial.

The Mystery of Ice-Cream Poisoning is a reproach to the professions of medicine and chemistry. Year after year, with mournful reiteration, there are many reports of fatal cases. The deaths from this source must immensely exceed those from hydrophobia, but Pasteur institutes spring up like mushrooms in every country, whilst the deaths of the victims of poisoning by the cream are passed over in silence. Would it not be well to look into this matter? Would it not be well to prove or disprove the theory of a writer in THE NEWS (Dr. Hull, June 27, 1891) that the common ice-cream freezer is often an electric battery decomposing toxic products by means of the mixture acting as an electrolyte?

Increase of Lunacy.—The *Medical Press and Circular* suggests that the great increase of insanity (88,822 cases in England and Wales—2000 more cases than were on the list in January, 1892) may be accounted for by the law of supply and demand, the deficiency of asylum accommodation, etc., checking the increase, the waiting or preparing multitude ready to fill the increased accommodation. This is certainly calculated to give one the most decided "creeps."

"Honor to Whom Honor is Due."—In the *Medical Review* of August 5, 1893, there are nine distinct articles or abstracts taken from THE MEDICAL NEWS without a hint of credit. We are willing to forgive and forget on the ground that it was an oversight of the printer, that the editor was absent—on any excuse whatever, good or bad—if we could but have an opportunity.

The British Medical Association Has Admitted Women to Membership, by a resolution passed last year, and at the meeting this year made effectual by an amendment of the by-laws.

SELECTION.

THE GLAMOR OF SUCCESSFUL SURGERY.

I HAVE sometimes wished that, in the multiplicity of papers describing important operations and their great success, there might be an occasional one, not upon how to do, but upon how not to do it. There is a glamor about successful surgery—a flashing of swift fame, a glitter of gold and a promise of financial felicity, as well as the conscious pride of success and of instant relief—that may mislead, operations being done that might have been averted by judicious hygiene, and patient, wise medical treatment. It is useless to deny that unnecessary operations, sometimes sexual mutilations, are done, and that many women are saved from them by changing their professional adviser. Some are so blinded by their successful surgery that they are unwilling to admit that they have ever committed such a fault, and have no patience with those who suggest its possibility. Human judgment is fallible, and liability to error belongs to all.

I would not disparage the brilliant results obtained by abdominal section in pelvic suppurations, and I recognize among American operators many as able and as successful as any in the world; at the same time I would gladly see their work much more limited, as I believe it can be when medicine asserts its prophylactic and cura-

tive power, and it surely will in the progress of our knowledge.—PROFESSOR T. PARVIN, *President's Address, American Gynecological Society.*

REVIEWS.

SURGERY: A PRACTICAL TREATISE, WITH SPECIAL REFERENCE TO TREATMENT. By C. W. MANSELL-MOULLIN, M.A., M.D. Oxon., etc., Assisted by Various Writers on Special Subjects. With 600 illustrations, many of which are printed in colors, about 200 having been made from special drawings. Second American edition, revised and edited by JOHN B. HAMILTON, M.D., LL.D., etc. Octavo, pp. 1238. Philadelphia: P. Blakiston, Son & Co., 1893.

WHEN a work as large as this on a general subject, the literature of which is already so voluminous, comes to a second edition within two years, it would seem that the author has succeeded in impressing many readers with the idea that his teachings have some special value. Occasionally some department of surgery is undergoing rapid evolution, so that a frequent reissue of the books devoted to it is needful in order to keep pace with the progressive changes of opinion or of practice. Such, however, is certainly not the case with the volume now before us. It is almost identical with the first edition. The alterations that have been made are chiefly in arrangement, and are not always advantageous. For instance, it is not clear why Minor Surgery and Anesthetics should have been transferred from their former place, at the end of the book, to the portion treating of the General Pathology of Surgical Diseases.

Nothwithstanding occasional lapses into carelessness of style, this book is an agreeable one to read. But it is not, in our opinion, available as a guide to the practice of modern surgery. Neither the author nor the editor seems to have had clear ideas of what is needed in a work intended for this purpose. For example, the details of the antiseptic system are very vaguely set forth, and in a way calculated to make the reader doubt whether it has any real value. The various articles commonly used are enumerated, with brief comments, and then we find (on p. 166) the following:

"Hydronaphthol is strongly recommended as non-poisonous and as powerful as corrosive sublimate under the conditions of actual practice. It is very soluble in alcohol, but only slightly so in cold water. Salufer succeeds very well in the hands of some, and appears perfectly safe. Eucalyptus preparations are very agreeable at first, but patients are apt to get tired of the smell. Chlorid of zinc, which is stated to be almost inert as far as germs are concerned, is undoubtedly of very great value under special conditions." To this the editor adds: "Solutions of bromin and iodin have each an exceptional value in certain conditions."

These general statements teach nothing at all.

Again, on page 678, the editor says in a note: "Prof. Senn, in common with most German surgeons, prefers the chisel and mallet to the trephine." But we have been unable to find any directions given for the use of these instruments on the skull, and the student must seek this information, if he wants it, elsewhere.

In describing the operation of inguinal colotomy, the author says that, after the peritoneum is opened, "the finger is introduced and passed along the lower margin of the iliac crest until the mesentery guides it to the sigmoid flexure." Now, the fact is that some portion of intestine presents at once in the wound, and the surgeon has merely to make sure, by well-known anatomic features, that it is colon and not small intestine.

We note that there is no mention of hot water as a hemostatic; yet the value of this "wrinkle" is universally recognized at the present day. Again, in speaking of amputation, the author lays down as the first principle, "to sacrifice as little as possible." Modern surgery says—amputate at the point where the best stump can be made for the fitting of an artificial limb.

The editor has appended a chapter on "The Principles of Military Surgery"; but as it consists of only eleven pages, seven of which are devoted mainly to illustrations, this great subject is, of course, scarcely hinted at.

A number of new illustrations have been added in this edition; the bacteriologic ones, from Woodhead, are very good—most of the others very bad. None of them is sufficiently explained in the text. By way of frontispiece an exceedingly poor lithograph, purporting to represent Senn's operation of intestinal anastomosis, has been introduced. The portrait of Senn may be recognized; but the procedure is clearly an end-to-end suture, and the only visible instruments are four pairs of hemostatic forceps; the assistants seem to have fled. Figs. 193 and 205 would be more illustrative but for the fact that they are upside down.

We do not think that this volume is likely to add to the reputation either of the author or of the American editor. Should another edition be called for, it is to be hoped that the practical portion will be wholly rewritten, so as to bring it abreast of the times.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS, WITH ESPECIAL REFERENCE TO THE CLINICAL APPLICATION OF DRUGS. By JOHN V. SHOEMAKER, A.M., M.D. Second edition, revised. In two royal octavo volumes. Philadelphia: The F. A. Davis Company.

WHILE a good text-book on therapeutics and materia medica is ever acceptable because of the constantly changing character of the subject-matter, we cannot feel that Professor Shoemaker's volumes have contributed materially to our sum of knowledge of drugs and their applications. Not to mention the absence from the pages of original material, the numerous typographic errors, the incomplete indexing, the omission of diacritical marks from the Greek roots, and the want of uniformity in the spelling of words, all indicate a hasty preparation and imperfect proof-reading. The book gives one the impression of being rather a compilation than a scientific treatise on materia medica, and the entire absence of classification, as shown in an alphabetic arrangement of the drugs with the bare statement of results culled from an immense bibliographic source without discriminating deductions, is not conducive to a clear understanding of their actual therapeutic values. In numerous instances the most important properties of truly valuable drugs have been overlooked, while obsolete and worthless remedies, as onion and beet, have found full mention. Apiolene and oxalic acid, the two

most efficient emmenagogues at our disposal, have not been credited, while spermine and cactin are rather favorably treated, notwithstanding the worthlessness of the former and the uncertain composition and commercial character of the latter. These are but a few of many examples. As a compilation the book is a success, but as a text-book on one of the most fundamental branches of medical science it cannot hold a foremost place.

THE HEALTH-RESORTS OF EUROPE. A Medical Guide to the Mineral Springs; Climatic, Mountain, and Seaside Health-resorts, Milk, Whey, Grape, Earth, Mud, Sand, and Air Cures of Europe. By THOMAS LINN, M.D. With an Introduction by TITUS MUNSON COAN, M.D. 8vo, pp. 330. New York: D. Appleton & Co., 1893.

IN a brief, but very clever introduction, Dr. Coan points out the *raison d'être* for this little volume, which, while written for the invalid and the tourist, contains much information that will prove valuable to the physician who may wish to give intelligent advice upon the selection of a suitable climate, form of bath, or health-resort. It will be willingly conceded that a great deal can be accomplished by "natural" methods of treatment in a certain group of cases in which the never so skilfully combined drugs of the Pharmacopeia may prove entirely futile; but, as with drugs, the choice must be judicious and dictated by the requirements of the individual case. Dr. Linn has essayed a rather difficult task, which, however, he has performed thoroughly well. After some introductory remarks as to choice of place, time of departure, preliminary treatment, length of treatment proper, and other incidentals, a classification of mineral waters is given. Then follows a therapeutic index, but the bulk of the book is devoted to descriptions of health-resorts, with details as to routes, therapeutics, springs, physicians, hotels, etc. Finally there is a directory of physicians and an alphabetic index. The book is well printed, in large type, upon good paper, and can be cordially commended to any who may be interested in the subject with which it deals.

CORRESPONDENCE.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

To the Editor of THE MEDICAL NEWS,

SIR: Attention has recently been called to the presumed lamentable condition of the *Journal of the American Medical Association*, the slim circulation and poor literary and scientific quality of which are from time to time forced into trying contrast with the success, in each way, of the *British Medical Journal*.

Those who are uninformed of the exact situation in regard to the circulation of the *Journal* cannot judge absolutely of its state in this respect; but there is a general impression that it has few subscribers outside of those who may be regarded as in a sense forced to take it, for the reason that it is sent to all members of the Association who once attend a meeting and pay the fee of membership, until they default in payment or order it stopped. But of its literary and scientific attainments all who see may judge. In this we think an unbiased opinion would be that the *Journal* has never been a success. This we believe is due to several conditions: One is that the Trustees were, for some years, so selected that they should have no will, or should exercise none, except as this coincided with the will of the first editor, and that afterward the Trustees were so chosen that a handful of them could shape the policy of the *Journal* and control its finances, and that they did this in a manner contrary to the dictates of common sense, and wholly in a way to foster sentiments of local jealousy and suspicion at the expense of the true interests of the Association and of the medical profession of the country. More than this, in our judgment the editors of the *Journal* have, without exception, allowed the pressure of what they believed was pecuniary necessity to influence them to adopt, in the conduct of the advertising and reading pages of the *Journal*, methods which such a journal should never have adopted, and which were thoroughly disapproved of by many of those who ought to have been kept in sympathy with it. Another mistake in the conduct of the *Journal* has been, we think, in selecting editors who had no close relation with the medical writers of the oldest parts of the country. It happens in the world that there is a constant tendency for scientific work, while proceeding Westward, to keep its face toward the East, where the older mediums of communication between men of science and of letters are issued, and that literary productions go naturally and easily toward those older sections, while they go with difficulty away from them. This is the case as between the two hemispheres and as between the two principal halves of this one. Now, we think the literary success of the *Journal* will never be what it ought to be until it has an editor who is a man of real literary culture, and who is in touch with the best writers in all parts of the country and the world. Such a man, backed by a high-principled business manager, ought to be able to make the *Journal* of the Association a credit to the American medical profession; and there is no use in blinking the need for them both. To do so may minister to angered *amour propre*, but it will certainly carry the *Journal* and the Association still further in the retrograde direction which it has been taking for the past ten or fifteen years. Time and renewed meetings have removed some of the special causes of divided interest which prevailed in the American Medical Association when the *Journal* was a bantling, and it is supposable that the members of the Association are more likely to be governed by judgment instead of feeling now than they were when they stood on opposite sides of an important question. Those who sincerely desire the good of the Association may now recognize each other's sincerity of motive, and get together to make the Association and its *Journal* what they ought to be—strong and prosperous. There are in the Association enough men of honest purpose to defeat the schemers who are responsible for its present condition. To these honest men the *Journal*, properly managed, would be a most important factor in bringing about what is needed; but it must set an example of strict honesty, high principle, and intelligent management to attain this object.

These comments are suggested by a hearty wish for the good of the Association and its *Journal*, and the

fact that they are permitted to appear in the columns of THE MEDICAL NEWS is an evidence of the unselfishness of its editor and publishers; for if the *Journal of the American Medical Association* were well conducted and ably managed it would be the most serious rival to other American medical journals which could be imagined.

FIDELITAS.

DR. UNNA'S PLASTER-MULLS.

To the Editor of THE MEDICAL NEWS,

SIR: Those physicians who are interested in dermatology, and are consequently familiar with the reputation and works of the eminent specialist, DR. P. G. Unna, Director of the Heilanstalt fuer Hautkranke in Hamburg, will know that a favorite form with Dr. Unna for administering medicaments is the plaster-mulls. These plaster-mulls were originated by Dr. Unna, and have been used and favorably indorsed by many physicians, including such authorities as McCall Anderson, Janowsky, Robert M. Morrison, J. C. McGuire, Edward Brock, Chotzen, Bulkley, and others.

Plaster-mulls are an ideal improvement on the ordinary spread plasters; fine gauze is covered with the thinnest possible layer of gutta-percha, on which the medicament is evenly spread, properly dissolved in a minimum quantity of vehicle or base. The gutta-percha covers the skin-surface hermetically, prevents transpiration from the pores, and thus facilitates the deeper absorption of the medicament and enhances the specific therapeutic effect of the indicated remedy. The vehicle or base employed is non-irritant and a solvent of the remedy. Of the latter, an exact amount or dosage is added, and being perfectly dissolved, every particle of the ointment-surface will act equally; in other words, the plaster-mulls offer a sort of specific medication. A chief advantage besides this exact dosage is that the plaster-mulls are so thin, elastic, and pliable that they can be closely affixed to any portion of the body without cutting or patching. No artificial heat or other manipulation is necessary for applying these plaster-mulls; simply placing them on the surface requiring treatment, and holding them there for a moment suffices to firmly attach the plaster to the skin by virtue of the body-heat.

While these plaster-mulls have come into extensive use in Europe, they have not been generally adopted in this country, principally for the reason that they have not been manufactured here, and the importation from Hamburg was connected with difficulties, loss of time, etc. Recently, however, I have been enabled to procure a limited line of the most important medications of plaster-mulls, and I take early occasion to report my favorable opinion.

The medications which I have used are as follows: Salicylic acid, each roll one meter long, by 20 c.m. (about one yard long and eight inches wide), containing 10 grams, which amounts to about one-thirtieth of a grain of salicylic acid to the square inch of plaster-mull:

Mercury, 20 gm. ($\frac{1}{15}$ gr.).

Mercury, 20 gm. ($\frac{1}{15}$ gr.); with carbolic acid 7.5 gm. ($\frac{1}{40}$ gr.). Zinc oxid, 10 gm. ($\frac{1}{30}$ gr.).

Zinc oxid, 10, gm. ($\frac{1}{30}$ gr.); with tar 5 gm. ($\frac{1}{60}$ gr.). Ichthyol, 10 gm. ($\frac{1}{60}$ gr.).

Resorcin, 15 gm. ($\frac{1}{20}$ gr.).

Salicylic acid, 10 gm. ($\frac{1}{30}$ gr.); with creosote 20 gm. ($\frac{1}{15}$ gr.). Salicylic acid, 20 gm. ($\frac{1}{15}$ gr.); with creosote 40 gm. ($\frac{2}{15}$ gr.).

I have given up ointments almost entirely. They lack the neatness, elegance and efficacy of a well-fitting plaster-mull. The general physician will find plaster-mulls of great utility.

In my own practice I am now employing these plaster-mulls wherever indicated, and it is my intention in a subsequent communication to furnish some clinical records confirming the good opinion already formed.

HORATIO R. BIGELOW, M.D.

1716 CHESTNUT ST., PHILA.

ALBUMINURIA AND GLYCOSURIA FOLLOWING A SEVERE BURN.

To the Editor of THE MEDICAL NEWS,

SIR: A rare and sad accident recently occurred here. While burning stubble in her little farm of six acres, the clothing of a negress, forty-three years old, suddenly caught on fire. No one was nigh, and, after her loud cries for help brought some friends to her aid, she was immediately taken to her log-cabin, and I was at once sent for. I got to her house ten minutes after the accident.

I carefully examined her, and found her corpulent and seemingly robust body seriously burnt. The left hand was badly scorched, the skin shrivelled, and the abductor pollicis, opponens pollicis, flexor brevis pollicis, and adductor pollicis being quite shrunken and drawn, while over the trapezium, trapezoid, os magnum, and unciform bones there was a deep burn. The right leg was not less injured, the tibialis anticus, extensor proprius pollicis, extensor longus digitorum, gastrocnemius, soleus, plantaris, popliteus, flexor longus pollicis, flexor longus digitorum, tibialis posticus, peroneus longus, and peroneus brevis being quite shrivelled and flabby.

The sternum was injured, a severe burn, about the size of a gold dollar, being on the manubrium and the xiphoid respectively. The next part of the body injured was the vulva, the hair on the mons Veneris being badly scorched, and the clitoris, meatus urinarius, and glands of Bartholin; also, on physical examination, a few moist râles were heard over both lungs. The heart-sounds were feeble, lacking volume and clearness.

The patient complained of a deep sense of weight, as though one were bearing heavily on her diaphragm. She experienced a frequent desire to micturate. I found the urine of the normal specific gravity, but containing albumin and sugar in small quantities. Speech was feeble and not well articulated. The treatment I employed was a dressing of oleum amygdali on young fig-leaves. In addition a combination of morphin with cherry-laurel water, tincture of gelseminum, and tincture of hyoscyamus was given every four hours.

The accident occurred at 11 A.M., and the patient died on the next day at 9.30 A.M.

Your obedient servant,

HENRY HARTLEY, M.D.,
Medical Mission Priest.

OGEECHEE, CHATHAM COUNTY, GA.

ANOTHER CASE OF PRECOCIOUS PREGNANCY.

To the Editor of THE MEDICAL NEWS,

SIR: In September, 1888, I was called to see a colored girl in my neighborhood who was said to be suffering

with dropsy. An examination revealed, to my astonishment, a seven months' pregnancy. This child, then several months less than thirteen years of age, was only fairly well grown for her age, and was totally undeveloped, to all appearances. There was absolutely no growth of hair upon the mons Veneris and no development of the mammary glands. I was positively assured that she had never menstruated.

On the 11th of November I attended her in confinement, and, after a comparatively easy labor, the second stage of which lasted rather less two hours, she was delivered of a vigorous female child, weighing about five and a half pounds. The action and ability of nature in moulding the head in conformity with the capacity of the pelvis was more beautifully exemplified in this case than I have ever seen it in another. The mother and child did well. The father, by the way, was a very large negro of at least fifty years of age, and the husband of a great-aunt with whom the girl lived.

Very truly yours,

R. M. SLAUGHTER, M.D.

THEOLOGICAL SEMINARY, VA.

NEWS ITEMS.

The Pan-American Medical Congress.—Program of the Section on Diseases of the Mind and Nervous System:

Formal Address, by C. H. Hughes, M.D., Executive President of the Section, St. Louis; "The Gangliated Nervous System and Some of its Diseases, by Charles K. Mills, M.D., of Philadelphia; Paper, by William A. Hammond, M.D., of Washington; "The Traumatic Psychoneurosis, Its Relations to Paranoia, Epilepsy, and Paretic Dementia," by J. G. Kiernan, M.D., of Chicago; Paper, by Theo. Diller, M.D., of Pittsburg; Paper, by E. C. Seguin, M.D., of New York; "The Urine in Sexual Neurasthenia," by Charles L. Dana, M.D., of New York; "Suppurative Meningitis and Myelitis, with Exhibition of Specimens," by Graeme M. Hammond, M.D., of New York; "The Disease of Inebriety and its Treatment," by T. D. Crothers, M.D., of Hartford, Conn.; "Chorea," by Charles Henry Brown, M.D., of New York; "Study of the Temperature in Twenty-five Cases of General Paralysis of the Insane," by Frederick Peterson, M.D., of New York; "The Present Status of Infantile Cerebral Palsies," by Frederick Peterson, M.D., of New York; "The Successful Management of Inebriety without Secrecy in Therapeutics," by C. H. Hughes, M.D., of St. Louis; "Erotopathia: Morbid Erotism, by C. H. Hughes, M.D., of St. Louis; "The Medical Treatment of Insanity," by Edward C. Mann, M.D., of Brooklyn; "Address of Welcome," (in Spanish), by William A. Hammond, M.D., of Washington; "Where the New-born Baby Learned to Suck," by C. A. F. Lindorme, M.D., of Atlanta, Ga.; "The Treatment of Nervous Diseases in Sanitariums," by James K. King, M.D., of Watkins, N. Y.; "The Influence of Alcohol upon the Human Powers and Constitution," by T. L. Wright, M.D., of Bellefontaine, O.; "The Treatment of Cerebral Hemorrhage," by D. R. Brower, M. D., of Chicago; "Neuro-Angio Paralysis and Its Relation to Paretic Dementia," by Frank C. Hoyt, M.D., of Clarinda, Ia.; Paper, by S. Weir Mitchell, M.D., of Philadelphia; Paper, by E. C. Spitzka, M.D., of New York; Paper, by O. T. Sherman, M.D., of Boston; "Civil Service in American Hospitals for the Insane," by S. V. Clevenger, M.D., of Chicago; "La Renguera," by Daniel Guiterrez Arango, M.D., of Cali, Cauca, Colombia; "Paralisis Espastica Cerebral du los Adultos," by Manuel Carmona y Valle, of City of Mexico; "On the Prognosis of 'Railway Spine,'" by F. X. Dercum, M.D., of Philadelphia; "The Nervous Symptoms of Storms," by Curran Pope, M.D., of Louisville; "A Peculiar Type of Vasomotor Neurasthenia (The Pulsating Disease), with Report of and Operation for the Same," by Charles L. Dana, M.D., of New York; "Curability of Inebriety," by J. G. Reed, M.D., of Elmwood Place, O.; "Nutrition Against Stimulation," by W. H. Maxon, M.D., of St. Louis.

The following is the program of the Section on Diseases of Children:

"The Most Successful Method of Treating Croup," by J. O'Dwyer, M.D., of New York; "The Teaching of Hygiene in Colleges and Public Schools," by F. Forchheimer, M.D., of Cincinatti; "Clinical Aspects of Infant Feeding," by E. P. Davis, M.D., of Philadelphia; "Clinical Notes of Eruptive Fevers in Southern California," by W. A. Edwards, M.D., of San Diego, Cal.; "Infant Feeding," by T. M. Rotch, M.D., of Boston; "The Time and Mode of the Introduction of the Exotic Diseases of Children into America," by J. Lewis Smith, M.D., of New York; "Physical Training of Public School Children," by J. Gardiner Smith, M.D., of New York; "Palmus," by L. C. Gray, M.D., of New York; "Enteroclysis in Intestinal Diseases of Children," by E. E. Graham, M.D., of Philadelphia; "Bacteriologic Diagnosis of Diphtheria," by H. C. Ernst, M.D., of Boston; "Aphasia in Children," by F. Peterson, M.D., of New York; "On Milk," (No definite title) by Henry D. Chapin, M.D., of New York; "The Race Factor in Gastro-intestinal Disease," by J. W. Byers, M.D., of Charlotte, N. C.; "The Treatment of Empyema in Early Life," by A. Brothers, M.D., of New York; "A Contribution to the Knowledge of Acute Primary Entero-colitis during Early Infancy," by Joaquin L. Duenas, M.D., of Havana, Cuba; Paper, by J. B. Deaver, M.D., of Philadelphia; "The Production of Cow's Milk Designed for Infant Feeding," by Henry L. Coit, M.D., of Newark, N. J.; "The Proper Mode of Preventing and Treating Diphtheria, Based on Recent Discoveries Relating to Its Etiology and Pathology," by J. Lewis Smith, M.D., of New York; "The Normal Precordia in Infancy and Childhood," by H. B. Whitney, M.D., of Denver, Col.; "Intestinal Parasites Observed on the Island of Puerto Rico," by Antonia Amadeo, M.D., of Manuabo, Puerto Rico; "Immediate Percussion Among Children," by Dr. Olinto, of Porto Algre, Brazil; "Feeding of Children in Cuba During Infancy," by Joaquin L. Duenas, of Havana, Cuba; "Pertussis as it Exists in the Rocky Mountains," by John M. Keating, M.D., of Colorado Springs, Col.; "Types of Gastro-intestinal Disease Prevalent in New York," by Floyd M. Crandall, M.D., of New York; "Insane Disorders of Childhood," by J. Madison Taylor, M.D., of Philadelphia; "Cirrhosis of the Liver in Children," by William A. Edwards, M.D., of San Diego,

Cal.; The Artificial Feeding of Children in Mexico," by J. Ramon Icasa, M.D., of City of Mexico.

Program of the Section on Military Medicine and Surgery:

"Laparotomy in Gun-shot Wounds of the Abdomen," by P. S. Conner, M.D., Cincinnati, O.; "Are Projectiles from Portable Hand Weapons Sterilized by the Act of Firing? Can a Septic Bullet Infect a Gun-shot Wound?" by Capt. Louis A. La Garde, Chicago; "The Point of Election in Amputations below the Knee, with Reference to the Serviceableness of Artificial Appliances," by Stephen Smith, M.D., New York; "The Avoidance of Intestinal Disorders in the Field," by Brevet Lt. Col. A. A. Woodhull, Surg. U. S. A., Hot Springs, Ark.; "Personal Experience in the Results of Good and Bad Sanitation in the Confederate Army," by Bedford Brown, M.D., Alexandria, Va.; "The Causes and Origin of Continued Fevers in Naval Service," by C. A. Seigfried, M.D., Surg. U. S. Navy, Newport, R. I.; "Aprestos de Campamento de uso en Cuba por los Medicos Militares," by Dr. Felix Estrada y Catoyra, Havana; Hospital Corps Drill by Detachment, under the command of Major Van R. Hoff, Surg. U. S. A.; Exhibition of a Field Hospital Complete with Equipment now in use in the U. S. Army; "First Aid to the Wounded and Transportation of the Wounded from the Battlefield and Field Hospitals;" Visit to the Army Medical Museum: (*a*) Inspection of Collection; (*b*) Inspection of Library of the Surgeon-General's Office; "Amputations Prothetically Considered," by George E. Marks, A.M., New York; "The Laws of Growth of Bacteria applied to Antiseptic Surgery," by Robert Reyburn, M.D., Washington; "Wounds of the Mannlicher Rifle in the Recent Civil War in Chile," by A. M. Fernandez Ybarra, A.B., M.D., New York.

The Cholera.—Two cases of cholera were reported in Rotterdam, on August 24th, and nine cases on August 25th. One new case and two deaths were reported on August 29th. Isolated cases were reported elsewhere in the Netherlands.

The reports concerning the progress of the disease in the infected districts of Austria and Hungary are contradictory. One death in Vienna has been reported. The infection was ascribed to drinking the unfiltered water of the Danube. One death is also reported at Althafen, a suburb of Buda-Pesth. The official returns from Galicia show that forty-two new cases and twenty-eight deaths were recorded on August 26th and 27th. On August 28th 134 new cases and 78 deaths were reported in Hungary. New cases are reported from time to time from Antwerp.

From Berlin it is reported that but for a few sporadic cases, traced to outside sources, Germany is still regarded as free from cholera. She is exposed daily, however, to dangers from her infected neighbors. On the Polish frontier danger threatens constantly. On the Austrian border the danger is fully as great, while all efforts to guard against it are likely to be rendered futile by the lying of the Hungarian authorities. The Hungarian Minister of the Interior is doing his best to obtain truthful reports from the infected districts, but he is thwarted by the local authorities. Some of the city and district officials suppress cholera news simply because they are too shiftless and ignorant to see the need of obeying the orders of the Home Office. Others do not report cases because they fear to annoy the people whose votes will be valuable at the next election. The people in most of the infected districts are reckless and illiterate. Most of them are dirty and dislike to be roused, cleansed and fumigated. The cholera spreads, therefore, almost unchecked among them, and nobody hears of it until the increasing mortality causes a panic.

Dr. Dunbar, Director of the Hygienic Institute in Hamburg, has tested seventy-seven samples of water from the Elbe and its affluents since July 19th. He has found bacteria in twenty samples, but in no case the genuine bacilli of Asiatic cholera.

There were eight deaths from cholera in Naples, on August 26th. It is reported that nineteen cases of cholera and five deaths have occurred at Palermo. On August 29th Naples was declared free from cholera. One case of cholera and two deaths were reported at Salerno, and three deaths at Cassino.

During the week ending August 26th, the following reports were received from the Russian provinces: Orel, 820 cases and 325 deaths; Tula, 653 new cases and 139 deaths; Kieff, 678 new cases and 227 deaths; Kazan, 230 cases and 88 deaths; Jaroslav, 193 new cases and 79 deaths; Don, 163 new cases and 113 deaths; Samara, 177 new cases and 68 deaths; Veronesh, 172 new cases and 88 deaths; Mohileff, 135 new cases and 48 deaths; Poltava, 134 new cases and 64 deaths; Kuban, 110 new cases and 93 deaths; Taurida, 115 new cases and 43 deaths; Grodno, 114 new cases and 34 deaths; Moscow, 110 new cases and 40 deaths; Ekaterinoslav, 79 new cases and 38 deaths; Minsk, 97 new cases and 49 deaths; Kharkoff, 99 new cases and 63 deaths; Kherson, 83 new cases and 20 deaths; Tchernigoff, 49 new cases and 19 deaths; Viatka, 64 new cases and 30 deaths; Simbirsk, 50 new cases and 23 deaths.

There are known to have been nine cholera suspects in St. Petersburg during the preceding week. In Kertch, in the Crimea, there were 44 new cases and 24 deaths. In Sebastopol the new cases numbered 9 and the deaths 6 in the last week.

From Paris it is cabled that a suspicious malady, supposed to be cholera, has broken out at Nantes, from which many persons are suffering.

Anton Weichselbaum has been unanimously elected as the successor of Kundrat, recently deceased, in the chair of pathologic anatomy, at Vienna. There seems no doubt that the election will be confirmed by the Minister of Education. Weichselbaum, who is forty-nine years old and since 1885 has been Professor Extraordinary of Pathologic Anatomy, has already gained distinction as a pathologist and bacteriologist.

Dr. Edmund Neisser has been appointed Professor of Special Medical Pathology and Therapeutics and Director of the Second Medical Clinic, at Vienna, to fill the vacancy created by the death of Otto Kahler.

Professor Hayem has resigned the Chair of Therapeutics at Paris to accept that of Clinical Medicine, recently rendered vacant by the death of Professor Peter.

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ORIGINAL ARTICLES.

SOME FACTS BEARING ON THE CONDITION AND SERVICEABLENESS OF THE STUMP AFTER AMPUTATIONS IN THE LOWER EXTREMITY AT DIFFERENT POINTS AND BY VARIOUS METHODS.[1]

BY STEPHEN SMITH, M.D.,
OF NEW YORK.

DURING the latter years of the civil war of the United States I was one of the surgeons to a military hospital located in the city of New York, to which were sent large numbers of soldiers requiring artificial limbs. These cases were individually studied with great care, and full records were made of all of the useful facts connected with them. Many of the deductions then made from these facts do not now have the force which they then had, owing to the influence of antiseptic methods on the results of the treatment of amputation-wounds. There were some features, however, of the investigation then made of a more permanent value, and which may prove instructive to the members of this section. It is in that view that they are brought forward in this paper.

1. INFLUENCE OF THE PLACE OF AMPUTATION UPON THE AMOUNT OF ATROPHY OF THE STUMP.

Among the final results of amputations, atrophy of the stump must be regarded as of the first consideration. Next in value to a firm and durable covering to the stump is a well-nourished extremity. If the stump undergo progressive atrophy, the artificial limb requires much more care to maintain its adaptation. The constant shrinkage of the extremity renders the appliance loose, and hence it requires readjustment by continuous padding of the socket. This padding of the socket is not required when the limb maintains its full dimensions.

The accompanying tables enable us to determine how far the method of operating and the point of the limb at which the amputation is performed influence the subsequent nourishment of the stump. The measurements were made when the stump was healed and prepared for the final adjustment of the artificial limb. The first or proximal measurement was made in the thigh at the highest point where the circumference could be taken, and in the leg immediately below the knee. The second, or distal measurement, was made directly around the extremity of the stump, at a point where the margins of the flap begin to incline toward the cicatrix. The figures entered in the tables under the head "atrophy," express the difference in inches and fractions of an inch between the measurement at the points indicated on the mutilated and uninjured limb.

COMPARATIVE AMOUNT OF ATROPHY OF STUMPS IN THE UPPER MIDDLE AND LOWER THIRDS OF THE THIGH AND LEG, IN THE AGGREGATE OF 430 CASES.
(In inches and fractions of inches.)

Limb.	Upper Third.		Middle Third.		Lower Third.	
	Proximal	Distal.	Proximal.	Distal.	Proximal.	Distal.
Thigh	0.45	1.05	1.56	1.70	1.34	2.08
Leg	0.97	1.70	0 71	1.42	0.57	2.26

It must be borne in mind that the proximal measurements in the thigh are all made at the same point; and the same is true of the leg. It would appear from this table that the point of amputation exercises a very marked influence upon the degree of atrophy of the stump, both in the thigh and leg. In general, the amount of atrophy progressively increases as we recede from the trunk, an exception, however, being noticed in the middle third of both the leg and thigh, which we shall presently notice. In the thigh the proximal atrophy is least in amputations in the upper third, and greatest in amputations in the middle third. In amputations in the lower third of the thigh the proximal atrophy is slightly less than in those performed in the middle third, but still it is three times as great as after those in the upper third. This fact proves a progressive proximal atrophy as the point of amputation in the thigh recedes from the trunk. In the leg this rule is reversed, and the proximal atrophy diminishes as the point of amputation recedes. And this atrophy diminishes in regular order, being least in amputations in the lower third of the leg.

It must not be supposed that the proximal atrophy is influenced by the amount of inflammatory thickening subsequent to the operation, for in that case the degree of atrophy would in general depend upon the proximity of the amputation to the point of measurement. But this is by no means the case. Amputations in the middle third of the thigh, near

[1] Read before the Section on Military Surgery of the Pan-American Medical Congress, September 7, 1893.

the point of measurement, are followed by a greater amount of atrophy than those in the lower third, remote from that point; while in the leg the largest amount of atrophy is in amputations near, and the least in amputations remote from, the point of measurement.

The distal atrophy, or that which occurs at the extremity of the stump, has in the thigh a progressive increase as we proceed from the trunk, being about twice as great in the lower as in the upper third. In the leg, on the contrary, the least distal atrophy occurs in the middle third, while that of the lower extremity is not so great, compared with that of the upper extremity, as was found existing between the upper and lower thirds of the thigh.

Comparing the atrophy of the stumps in thigh and leg amputations, we notice that the proximal atrophy is greater in amputations in the upper third of the leg than in the same region of the thigh, while in the middle third it is more than twice as great in the thigh as in the leg, and in the lower third the excess of atrophy is proportionately greater in the thigh than in the leg. The distal atrophy varies very markedly as follows, namely: In the upper third it is greater in the leg; in the middle third it is greater in the thigh; and in the lower third it is again greater in the leg.

These facts may be stated in general terms as follows:

1. In the thigh, the farther amputation is performed from the trunk the greater will be the atrophy of the entire stump.

2. In the leg, the farther amputation is performed from the trunk the greater will be the atrophy of the extremity of the stump and the less the atrophy of the body of the stump.

2. INFLUENCE OF THE METHOD OF AMPUTATION UPON THE ATROPHY OF THE STUMP.

We next proceed to inquire as to the influence of different methods of amputation upon the nourishment of the stump.

The accompanying table contains a distribution of the several methods of amputation in the thigh and leg, with a computation of the average amount of atrophy following each.

This table illustrates in a very striking manner the influence of the various methods of forming the covering of the stump upon the nourishment of its cicatricial tissue. The difference in the amount of atrophy of the distal extremity evidently depends upon the extent to which the arterial supply has been sacrificed. In the thigh the arteries which are distributed to the muscles arise principally, in the upper third, from the femoral branches immediately below Poupart's ligament, and in the middle and lower thirds from the profunda.

COMPARATIVE AMOUNT OF ATROPHY OF STUMPS AFTER AMPUTATION BY VARIOUS METHODS IN THE UPPER, MIDDLE, AND LOWER THIRDS OF THE THIGH AND LEG.

(In inches and fractions of an inch.)

Method.	Upper Third		Middle Third		Lower Third	
	Proximal.	Distal.	Proximal.	Distal.	Proximal.	Distal.
Thigh. (Total number of stumps, 157.)						
Circular	0.7	0.7	1.4	1.9	1.6	2.5
Antero-posterior flaps	0.2	1.4	1.1	1.6	1.6	2.4
Lateral flaps	...	...	1.8	1.8	1.6	2.3
Anterior flap	...	...	2.5	2.2	1.3	2.4
Rectangular flap	...	...	1.0	0.0	2.0	2.8
Skin-flaps and cir. muscles	...	...	...	...	0 6	1.5
Posterior flap	...	...	...	...	0.7	0.7
Leg. (Total number of stumps, 287)						
Circular	1.1	1.5	1.0	2.3	0.5	2.3
Antero-posterior flaps	1.1	1 3	0.4	1.1	0.1	2.7
Posterior flap	1.3	1.1	0.5	2.2	1.0	2.6
Lateral flaps	0.4	2.9	1.0	1 0	0.7	2.6
Skin-flaps and cir. muscles	...	...	...	...	0.5	1.1

In the upper third of the thigh, therefore, a circular amputation would divide the branches of the femoral at a higher point than an antero-posterior flap—in which the posterior flap is usually longer than the anterior—and hence the atrophy would be greater in a stump formed by a circular than in one formed by an antero-posterior flap. The same rule would apply to these operations in other parts of the thigh, though perhaps not so markedly.

The method of operation by lateral flaps does not differ materially, in respect to the degree of atrophy, from the circular, and the results of the two are seen to be very similar.

The method of operation by making an anterior and rectangular flap differs in this important respect from the preceding methods, namely, that the flap is made wholly from the anterior part of the limb, while the tissues are completely divided to the bone in a perpendicular direction on the posterior aspect of the limb. By these methods the principal covering of the stump is poorly supplied with nourishment, and hence atrophy would be more likely to occur. This is seen to be the case especially in the anterior-flap method in the middle third and the rectangular flap in the lower third.

The methods which give the least atrophy of the stump, both in its proximal and distal portions, are the skin-flaps and circular of the muscles and the posterior flap. It is not difficult to understand why the posterior-flap method gives results so favorable; it leaves quite intact the full vascular supply to the entire covering of the stump. In this respect it might well be regarded as the best method of operation in the thigh; but these advantages are so

counterbalanced by the tendency of the flap to retain pus, its heavy and unsuitable position for transportation, etc., that it has but few advocates. The method by skin-flaps and circular of the muscles gives results nearly as favorable as the posterior flap, and much more favorable than any other of the preceding methods. It is greatly preferable to the posterior-flap method, both on account of the facility of drainage and the neat apposition and lightness of the flaps, thus adapting it to transportation.

The influence of the various methods of operation upon the nourishment of the stump is not so well marked in the leg as in the thigh. This is unquestionably due to the peculiarity of the arterial distribution. The larger trunks are numerous and are deeply situated in immediate relations with the bones. They are not, therefore, liable to division until the operation is about to be completed. There would, therefore, be but little difference among these operations as regards the vascular supply of the flaps, except so far as the extent of the flap should modify the ultimate distribution of arteries. A long flap would necessarily have less supply than a short flap, and would be more liable to immediate death and future atrophy. Of the different methods it will be noticed that the skin-flaps and circular of the muscles give the least atrophy in the leg, as well as in the thigh.

3. COMPARATIVE VALUE OF STUMPS IN AMPUTATIONS IN THE LOWER THIRD OF THE LEG AND AT THE ANKLE-JOINT.

It must be observed that amputation at the ankle-joint is always an alternative operation. It is selected in preference to an amputation at a point higher up on the limb. It should also be added that it is an operation of expediency. It is not a *dernier ressort.* If it fails of success the surgeon may still, with rare exceptions, perform the alternative amputation through the leg, with the prospect of as favorable results as when the latter is the first operation.

In determining the value of ankle-joint amputations, therefore, the following questions naturally arise for our consideration:

The comparative serviceableness of the resulting stump depends upon—

(*a*) The ability for unaided locomotion on the stump.

(*b*) The adaptation of the stump for an artificial limb.

(*a*) *As regards unaided locomotion on the stump.*—Ankle-joint amputations differ from amputations in the leg in this essential particular, namely: in the former the support is taken directly upon the extremity of the stump, and in the latter upon the sides of the limb. In model stumps of each class it will be found that the one which takes direct support upon the extremity is not only capable of enduring a much larger degree of service, but the person suffers far less inconvenience. Direct pressure upon the heel-flap may be endured as long in Syme's stump as similar pressure upon the natural heel. And the same is true of stumps following Pirogoff's method. Patients with these stumps have frequently been known to walk successive days twenty and thirty miles with only the simple covering or protection of the heel of a common shoe or boot. These are by no means exceptional cases. Surgeons who have been accustomed to meet with the results of this operation most frequently uniformly testify to the ease with which patients betake themselves to the stump with only such covering as they can rudely adjust. Of the stumps left by Syme's and Pirogoff's operation, the latter has the geater length, and this requires less compensation.

Amputations through the leg, at whatever point and however skilfully performed, never furnish stumps which take direct support.[1] The limb is useless for locomotion by any simple means of compensation; it is only when an artificial limb is accurately and skilfully adjusted that it serves the purpose of even simple progression.

Again, in amputation at the ankle-joint the patient retains power over the muscles of the calf, which are essential to the act of running. It is extremely rare that a patient who has suffered amputation of the leg can make even the pretence of running upon his artificial limb. The muscles, especially of the calf, have shrunk from disuse, and progressive, permanent atrophy of the parts below the knee ensues. In ankle-joint amputations, however, the tendons of all the muscles employed in locomotion retain their former or acquire new attachments, and are immediately and constantly exercised in the movements of the limb. It is true that this movement of the muscles is more limited than in the normal limb, but it is, nevertheless, sufficiently great to preserve much of their activity, and consequently their nutrition is but partially impaired. The importance of preserving the functions of the muscles of the leg is seen in the perfection of gait which persons with ankle-joint amputations soon acquire. They can not only run, often with great ease and facility, but they also acquire the power of leaping, dancing, etc., to such perfection that their disability frequently passes unrecognized.

[1] Truax, an experienced manufacturer of artificial limbs, makes this statement: "When a section has been made through a bone no weight can be borne on the end of the stump. Disarticulation or an osteoplastic operation alone will admit of pressure."—"Amputations in the Light of Prothetical Science."

(*b*) *As regards the adaptation of the stump for an artificial limb.*—As previously stated, the stump after ankle-joint amputation takes direct support upon the extremity. Mr. Quain thus speaks of the advantages of direct support in referring to Syme's amputation: "It is free from any valid objection, and, what is more important, the result in practice has been found to be good. A person who has undergone this operation is enabled to bear his whole weight upon the end of the stump without inconvenience; and on this account the facility of progression is, with a proper apparatus, decidedly greater than when the amputation is performed at any higher part of the limb."

The advantages of the ankle-joint stump over those of the leg for the adaptation of an artificial limb are admitted by the most competent mechanical surgeons to be of the most undoubted character. In Syme's amputation the patient walks upon the end of the stump with ease and grace, can run, leap, and dance, and is capable of enduring fatigue little short of that of the sound limb. Dr. E. D. Hudson, of New York, a most skilful mechanical surgeon, and who was selected by the government to apply artificial limbs to the soldiers in the hospital referred to, states that in fifty cases of ankle-joint stumps to which he applied limbs he had not met with a single instance in which the stump did not, after preparatory treatment, take direct pressure without inconvenience and give a most happy result. No results at all comparable with these are attainable with any form of stump above the ankle.

This review of the comparative merits of ankle-joint and leg amputations, as exhibited by statistical evidence, authorizes the following conclusions:

1. The stumps left after ankle-joint amputations are far more serviceable for unassisted locomotion than those resulting from leg-amputation.

2. An artificial limb can be far more usefully applied to an ankle-joint than to a leg stump.

SHOULD INEBRIATES BE PUNISHED BY DEATH FOR CRIME COMMITTED WHILE INTOXICATED?[1]

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A NEGATIVE answer to this question is an evolutionary growth, coming into prominence uninfluenced by legal rulings or personal opinions.

It is asserted that over five hundred homicides occur every year in this country in which this question comes up.

In every case it is met by the statement of the law "that drunkenness in law is no excuse for crime," and this is urged as if it were a fixed principle. Three hundred years ago Lord Coke, of England, decided that inebriety always aggravated the offence, and the punishment should be rather increased from this fact. This view has been the theory for the legal treatment of inebriety up to the present. It practically assumes that inebriety is a phase of savagery, and a tendency to lawlessness, or giving up all control or restraint of the lower animal impulses without regard to law, order, or society. An ethical and moral theory of inebriety calls this moral depravity and an innate vicious impulse. The remedy urged from these theories is severe punishment and suffering—the vengeance of the law, intimidation, pain, loss, and so on.

The *modern scientific view* affirms inebriety to be a physical condition of degeneration and disease, inherited or acquired, and at all times a modified form of insanity. The use of alcohol is in many cases only a symptom of degeneration, and in all cases it not only produces changes of brain-circulation, congestion, paralysis, and impairment of all functions and organic processes, but it kindles into activity latent degenerations and tendencies, the result of which is incapacity to reason, with imperfect control and damaged senses. The inebriate cannot be a normal, sane man.

The practical question to be determined is the possibility of anyone using spirits to excess, at intervals or continuously, without impairing his judgment and power of control.

Intoxication, whether associated with delirium or stupor, is always a condition of brain-paralysis and poisoning in which the mind is incapable of acting normally. This condition is recognized as insanity, and has all the symptoms, only varying in duration, and is followed by a return to former health. The more frequent the intoxication, the greater the injury to the brain; and the shorter the intervals between these attacks of poisoning, the more doubtful restoration would be to follow. These facts are self-evident, and crime committed when in the intoxicated state would always be the act of a madman.

In a casual grouping of twenty murders reported in the daily papers, in every instance the account described the criminal as intoxicated or drinking heavily at the time of the commission of the crime. In four cases the criminal had awakened from the stupor of intoxication, and drank again before the acts committed.

In all such cases the obviously unsound brains, and mental incapacity to either reason or control, must be beyond question. At this point the law urges the most presumptuous fiction, viz., that this state of madness is voluntary and within the control of the victim, who should be punished for using

[1] Read before the Section on Medical Jurisprudence of the Pan American Medical Congress, held in Washington, D. C., September 5, 6, 7, and 8, 1893.

spirit with full knowledge of its effects on his mind and conduct. This assumption, if true, must necessarily be founded on physiologic and psychologic facts that are far beyond all present knowledge. A brief outline of some of the effects of alcohol on the brain will make this clearer.

To-day it is shown that the action of alcohol on the brain and nervous system is anesthetic and paralyzant. The use of alcohol to excess at intervals or continuously always numbs and paralyzes the higher operations of the brain; the over-stimulated heart reacts and depression and feebleness follow. All the senses are disturbed and become more or less incapable of transmitting the impressions which are received. The brain cannot accurately comprehend the nature of acts and the relation of surroundings when under the influence of alcohol. The palsy which follows from this drug masks brain-function. Delusions of vigor and strength appear; events, their consequences, and motive and conduct, are all exaggerated, misconceived, and misinterpreted, and the brain is unable to correct them. The pronounced delusions, illusions, delirium, mania, imbecility, and stupor seen in states of intoxication are only the advanced stages of brain-conditions which begin with the first glass of spirit. The early-changed conduct and speech of men who use spirit are the first symptoms of the paralyzing action of alcohol. More spirit is followed by more paralysis, and finally all judgment and experience and all distinctions of right and wrong, of duty and obligation, are confused and unreal. The supposed brilliancy which follows the use of spirit is unreal and transient—it is the glamor of the mind which has lost its balance and is unable to correct itself. No other drugs are known, the paralyzing effects of which on the higher brain-centers are so positive and insidious. The inebriate and moderate drinker have always impaired brain-force and nerve-power. The automatic nature of their life and brain-work may cover up this fact; but change the surroundings and demands on the brain, and its incapacity appears. Every toxic state from alcohol more or less permanently impresses and debilitates brain-integrity.

The fear of the law and the consequences of acts make little impression in such cases. The brain is anesthetized and crippled, and cannot realize events and their nature and consequences. The more pronounced the inebriety and the longer its duration, the more positive the disease and incompetency to reason and control acts. The effort to fix a point in all disputed cases where sanity and responsibility join insanity and irresponsibility is an impossibility which every advance of science demonstrates. It is equally impossible to use alcohol to excess for years and have a sound, normal brain. It is impossible in such a case to fully realize the nature and consequence of acts and obligations. It is a legal fiction to suppose that a crime committed while under the influence of alcohol is the voluntary act of a sane man. It is a legal fiction to suppose that a sane man would plan a crime, then become intoxicated for the purpose of executing it. It is a legal fiction to suppose that premeditation in crime committed by an inebriate is evidence of sanity and consciousness of his acts. These are some of the facts of science which bring additional evidence of the error of capital punishment in such cases.

A study of the crimes committed by inebriates amply confirms the facts of brain-incapacity and brain-disease. Thus in cases of capital crime by inebriates, delusions, illusions, morbid impulses, and epileptic explosions are common symptoms. In many cases capital crime is the result of peculiar circumstances and sudden strains on the enfeebled brain, or the possession of a morbid impulse, a delusion or illusion that suddenly dominates the mind; also epileptic explosions, that are real attacks of maniacal fury and unreason. Alcoholic somnambulism or trance is present in many cases. The mind in these cases is oblivious to all outside influences or considerations and is subject to every passing impulse that may come from either external or internal causes. At the time no general indications of unconsciousness may be present, yet a certain automatic line of conduct and history of crime give clear hints of brain-enfeeblement. All crime by inebriates will be found associated with concealed or open delusions, morbid and epileptic impulses, and sense-deceptions. In all of these cases the brain is unsound and cannot act rationally and clearly. There are present in these cases either the insanity of inebriety or the inebriety of insanity. The inebriety of the prisoner has merged into insanity, and this concealed insanity or brain-degeneration has developed into inebriety or dipsomania. The death-penalty has no horrors for such cases. It is rather welcomed. The struggle for life is the attractive publicity that makes the hero of the man, and the mystery of the end of life intensifies the interest to the last moment. A form of delirious exaltation manifest in religious faith or a martyr's innocence sheds a mysterious glamor over the execution of the law that has no terrors.

In England, a century ago, when public executions for thieving were common, thieves and pick-pockets committed the same crimes in the crowds about the gallows. To-day the execution of an inebriate murderer, when all the details of the crime are made public, becomes an object-lesson, closely followed by inebriates who commit exactly similar crimes, in a similar manner.

The natural history of such cases is continuous punishment for inebriety, assault, theft, burglary, and petty crime, and finally murder. Each period of punishment is followed by the same or a more aggravated crime. The intent and purpose of the law is defeated, and this means of treatment both directly and indirectly increases crime and prepares the inebriate for worse and more hopeless states. The courts and prison officials are powerless; public opinion sustains the law and demands its execution irrespective of all consequences. The poor victims punished to-day reappear to-morrow, under arrest for the same or a worse crime. The severity of the punishment makes no difference. The inebriate who, under the influence of alcohol, commits assault to-day will do so to-morrow, and next year, and so on, as long as his inebriety continues. No legal punishment of fines and imprisonment can stop him. These facts are sustained by the experience of all courts and prison officials. They also apply equally to the death-punishment of inebriates for crime.

When the crime is the direct or indirect result of inebriety, it is only the natural outcome or logical result of conditions of brain-disorder and surroundings. The assumption that inebriety is always a voluntary condition within the control of the person, is a most fatal error. On this error is based the death-penalty. Its practical failure is apparent in the increase of capital crime by inebriates. The inebriate who has been arrested for petty crime while intoxicated many times before, finally commits murder in the same condition, and is executed. His friends and companions do the same thing and suffer the same penalty. Thus one brutal murder committed in a state of intoxication is followed by another equally brutal, and the execution of the murderer makes no diminution in the number of similar crimes that follow.

In every daily paper appear records of the same murders by inebriates under the same circumstances. A wave of public vengeance may dispose of the criminal by lynch-law, or only be satisfied when he is hung, but the same murders are committed again by the same class of men. This is only the repetition of the same blunder of fining and imprisoning inebriates for inebriety and petty crime. In both cases the victims are destroyed and similar offences are increased rather than diminished. In one case imprisonment and fines make the inebriate more incurable and less capable of change of life and living; in the other, the execution of the inebriate leaves a brutalizing, combative influence and a form of contagious glamor that defective brains are powerless to resist. These are the facts which experience and observation fully confirm, and which the latest teachings of science explain and point out.

A summary of the facts that we have outlined would sustain the following statements:

1. The legal treatment of insanity has changed in obedience to a more accurate knowledge of the brain and its diseases.

2. The legal treatment of inebriety is unchanged to-day. Although it occupies two-thirds of the time of courts, all teachings of science and a larger knowledge of the inebriate and his malady are ignored.

3. The ruinous error of punishment by fines and imprisonment of inebriety, and petty crimes associated with it, which notoriously increases and perpetuates the inebriate and criminal, is a fact demonstrable in every community.

4. Thus public opinion, through medieval theories and laws, is training and preparing a class of inebriates who first commit petty, then capital crime, with a certainty that can almost be predicted.

5. The death-penalty for such crime utterly fails for the same reason. The execution of any number of this class simply opens the door for an army already prepared and trained to take their places.

6. From a scientific study of these cases, it is clearly apparent that they are diseased and incapacitated to act sanely. Alcohol has palsied the brain and made them madmen. The very fact of the continuous use of alcohol is evidence of mental impairment and unreasoning act and thought.

7. To hold such men accountable for their acts, and by punishment expect to deter them from further crime, and by such punishment check others from similar crime, is an error which both scientific teaching and experience point out.

8. The object of the State, through the law, is to protect society and the individual; but if the execution of the law-breaker fails to accomplish this end, the laws are wrong.

9. The unfounded fear that the plea of insanity in crime, and the failure to punish, constitute an encouragement for further crime, is flatly contradicted by statistics.

10. Among the mentally defective, the insane, and inebriates, the death-penalty is followed by an increase rather than a diminution of crime.

11. The inebriate should never be hung for crime committed while under the influence of alcohol.

12. This method of punishment is never deterrent, but furnishes an attraction for other inebriates who commit similar crimes in the same way, following some law of mental contagion.

13. The inebriate murderer should be confined for the rest of his life in a military work-house hospital. He should be under the care of others, as incapacitated to enjoy liberty and incompetent to direct his thoughts or acts.

14. A change of public sentiment and law is

demanded, and a readjustment of theory and practice called for. The criminal inebriate occupies a very large space among the armies of the defective who threaten society to-day, and his care and treatment must be based on accurate knowledge, and not on theory.

15. Inebriate murderers should never be placed on public trial, where the details of the crime are made prominent or the farcical questions of sanity are publicly tested. They should be made the subject of private inquiry, and placed quietly in a work-house hospital, buried away from all knowledge or observation of the world.

16. The contagion of the crime and punishment would be avoided, and the inebriate's services might repair some of the losses to society and the world.

MALLET-FINGER.[1]

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK.

THE deformity here described is not uncommon among men who engage in athletic sports.

When the extensor tendons of the fingers are tense, a blow upon the end of a finger transmitting force in a direction which would ordinarily flex the finger, results in injury to the extensor tendon in the vicinity of its attachment to the dorsal surface of the last phalanx. The injury consists, not in a bodily separation of the tendon from its points of attachment, but rather in a thinning of the tendon cephalad from the principal point of attachment to the phalanx, and from the fibers that form the

FIG. 1.

Mallet-finger. (Showing permanent dropping of tip of forefinger.)

posterior ligament of the last phalangeal articulation. A few fibers of the tendons are undoubtedly ruptured, but most of them slide away from each other very much as the threads of a textile fabric separate when the fabric is violently stretched, but not torn, the structure retaining its original general appearance.

[1] Read before the Section on Anatomy of the Pan-American Medical Congress, Washington, September, 1893.

Immediately after the occurrence of the injury to the tendon the last phalanx of the finger assumes a semi-flexed position, and the deformity is usually permanent, the extensor tendon then having little

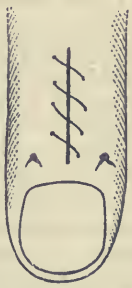
FIG. 2.

Extensor tendon of index finger thinned by artificial production of mallet-finger upon the cadaver.

or no influence upon the freed phalanx. Aside from the uncanny appearance of such a finger, the deformity is a source of much annoyance to the patient.

The tendon is repaired without much difficulty by making a longitudinal incision two centimeters in length over the site of the injury, dividing the

FIG. 3.



End of finger, showing line of incision and sutures. The two black dots mark the points at which the fasciculi and tendon are sutured to the skin.

thinned tendon longitudinally into the two principal fasciculi into which it naturally separates, dividing the tendon transversely, cephalad from the thinnest point, and advancing each fasciculus to a point upon its own side of the finger, near the base of the finger-nail. At this point the fasciculus is sutured to the under surface of the skin with a suture which passes through the skin, and is tied upon the outside. The fasciculi are sutured to skin rather than to periosteum and tendinous remains, because the former structure affords a firmer hold and the cut end of the tendon makes as good union with the phalanx as it would if sutured directly to periosteum.

The finger-nail is sometimes lost temporarily as a result of the operative disturbance near its matrix.

FIG 4.

Temporary flexion at middle phalangeal articulation after advancement of extensor tendon.

When the advanced fasciculi are sutured in place there is an over-correction of the deformity of the phalanx, which causes also a flexion at the middle phalangeal articulation. This condition is temporary and disappears spontaneously in a few weeks, leaving a perfect finger.

CLINICAL MEMORANDA.

THE REMOVAL OF STONE IN THE BLADDER; LITHOLAPAXY.

BY W. S. FORBES, M.D.,
OF PHILADELPHIA;
PROFESSOR OF GENERAL, DESCRIPTIVE, AND SURGICAL ANATOMY IN JEFFERSON MEDICAL COLLEGE, AND CLINICAL SURGEON TO JEFFERSON MEDICAL COLLEGE HOSPITAL.

IN reporting the following five cases in my list of patients with stone in the bladder, and on each of whom I performed the operation of crushing the stone and removing the fragments and débris from the bladder at one sitting (litholapaxy), I desire to call attention to the range of years in the patients, and to emphasize the fact of the successful application of litholapaxy to the young child as well as to the old man.

The oldest patient was eighty, and the youngest was three years of age.

The old man had a very large prostate gland, but was otherwise in good condition. In the child, of course, the gland was but rudimentary, yet in each case the appropriate lithotrite and canula were used with ease, and there was the happiest result in crushing and removing the fragments.

CASE I.—J. W., of Virginia, aged eighty years, was examined on February 1, 1893, and on February 8th the stone, of the uric acid variety, was crushed and removed. On the 15th of February he went home well. The weight of the fragments was 136 grains.

CASE II.—G. W. C., of Erie, Pa., aged fifty-five years; brought to me by Mr. O. C. Aichner, a member of my class; was examined on the 25th of January, 1893. On the 29th the stone was crushed and removed. On the 6th of February he returned home, well. The fragments weighed 90 grains. It was of the oxalate of lime class.

CASE III.—C. A., of Philadelphia, twenty-three years of age; also brought to me by Mr. Aichner; was examined on February 15, 1893. On the 20th inst. the stone was crushed and removed. He was discharged on February 28th, well. The fragments weighed 80 grains. The stone was phosfate of lime.

CASE IV.—J. B. M., of Mercersburg, Pa., seventeen years of age; brought tome by my friend Dr. E. A. Hudson, of Mercersburg. He was examined on February 7, 1893. This young man had suffered from symptoms of stone for ten years. He was a farmer's boy. His bladder was capable of holding only two ounces of water, and its walls were much thickened. On the 18th of February the stone was crushed and removed. He went home well on March 1st. The fragments weighed 320 grains, and their composition was uric acid and phosphates. The stone had a large and very hard and tough uric acid nucleus.

CASE V.—B. O. D., of Philadelphia, was three years of age. This child had symptoms of stone for more than a year. He was examined on the 28th of January, 1893. The stone was crushed with a No. 10 (American scale) lithotrite, and the fragments removed on February 3d. He went home well on March 1st. The fragments weighed 70 grains. The composition was uric acid.

In every one of these cases the bladder was washed out previously to the operation with a mild sterilizing lotion—bichlorid of mercury and warm water, 1 : 10,000. At the moment of operation all urine was drawn off, and, according to the size of the bladder, from two to six ounces of the boric solution injected. After the operation the bladder was well washed with a warm boric solution, and after this a large hot hop-poultice was applied to the entire abdomen.

Ether was used on every occasion.

1704 WALNUT STREET.

DISEASE OF THE MIDDLE EAR INVOLVING THE MASTOID PROCESS.

BY W. F. CONNERS, M.D.,
OF OIL CITY, PA.

ON February 23d, Dr. Jas. B. Siggins, of Tionesta, kindly asked me to see a case of ear-disease with him. The patient, Mrs. A. M. D., twenty-eight years old, delicate and reduced by an attack of influenza, was seized with sore-throat about two weeks previously, with pain in the right ear, which shortly afterward began to discharge a large amount of pus. All went well for a few days, when the left ear began to discharge. A few days before I saw the patient, the right ear had ceased to run and the mastoid process of that side had become very painful. On the day before I saw her the woman had several "sinking" spells, with semi-coma, at times being delirious and roused with difficulty. The pain had been combated with hot external applications, which could no longer be borne. On examination, the bony part of the auditory canal was found to be filled with a whitish detritus, and nearly closed. After a hot carbolized douche the ear-drum was found floating in the basin, having been washed out of the ear. The hearing

in the right ear was *nil* and one had to speak loudly into the left in order to be understood. The left drum was gone, except for a narrow rim in the center around the handle of the malleus, which looked red and was bathed in pus. No tenderness of the left mastoid was observed. Owing to the weak condition of the patient we deferred operating on the mastoid and decided upon adding quinin and iron to the strychnin which the patient was taking, and morphin to control the pain. During the next few days, the douche being continued, the patient made some improvement, but got little relief from the mastoid symptoms. Four leeches were tried, but they caused so much pain that they could not be kept on. I saw the patient again on the 28th, and finding the right canal much congested, opened it freely along its lower part. There followed a free flow of blood, which for a time relieved the pain. I did not see the left ear for want of time, but learned that it still ran moderately. The tenderness over the right mastoid was less, and a poultice could now be borne. I directed a cantharidal plaster an inch square to be applied to the mastoid just behind and slightly below the auditory meatus. The night of the 28th and the day of the 29th were both bad ones. They were followed by an erysipelatous eruption over the right half of the head, preceded by marked congestion of both eyes, and with entire relief from the pain over the right mastoid and ear. On the morning of March 2d patient complained of a bad taste in the mouth and for several weeks expectorated large quantities of fetid pus, at times mixed with blood. The quinin was replaced by tincture of ferric chlorid.

Three months later I examined both ears at my office; found the drums healthy and the hearing-distance, for a watch, about three feet, with scarcely any evidence of the imperilling condition in which the woman had been.

SOME OBSERVATIONS ON A CASE OF COMPOUND FRACTURE OF THE SKULL.

BY J. CHALMERS DA COSTA, M.D.,
OF PHILADELPHIA;
DEMONSTRATOR OF SURGERY IN JEFFERSON MEDICAL COLLEGE.

A RECITAL of the following case will illustrate some facts from which conclusions of great practical importance can be deduced.

Mr. G., forty years old, a commercial traveller, was struck on the head with a cane during a street-brawl. He was temporarily unconscious, but, on reaching the hospital, was found to be perfectly conscious. An examination made ten hours after the accident showed the man to be spare and of medium height, apparently healthy and well nourished. There was a contused wound over the left eyebrow, leading down to uninjured bone, and inflicted by falling down upon the face when struck. Both eyes were blackened; the conjunctiva much injected; the face discolored; the pupils equal and normal in size and reaction. There was a contused wound, one inch long, upon the right side, over the posterior inferior portion of the parietal bone, which bone, touch disclosed, was very decidedly depressed. The mind of the patient was entirely clear; he was able to detail with calmness and accuracy the events leading up to the assault. Moderate pain was felt about the fracture, in addition to a general dull headache, but there was no spasm, no paralysis, no affection of bladder or rectum.

In spite of the entire absence of cerebral symptoms, the extent of the depression and the fact that the fracture was compound led me to advise trephining, which recommendation was approved of by Professor Keen. The scalp having been previously shaved and rendered surgically clean, the patient was at once etherized and the parts exposed by a free incision. The bone was trephined and a button removed from the end of the split toward the vertex. The inner table exhibited extensive splintering, large fragments having been driven deeply under the edge of firm bone, thus widely separating the dura. At least an ounce of fresh blood escaped on removing the button and lifting the depressed fragments; the blood was seen to have come from a laceration of a posterior branch of the middle meningeal artery, which was still bleeding. There was also a great amount of blood welling up from under the lower edge of the wound, some radicle of the lateral sinus having suffered. All of the fragments were removed; the bony edges were cut smooth with the rongeur; the bleeding from the artery was arrested by passing catgut ligatures around the vessel on each side of the rent; the bleeding from the vein was checked by packing with iodoform-gauze. The fragments were not replaced. The end of the gauze projected out of the wound, the edges of which were approximated with sutures of silkworm-gut. The wound of the forehead was also sewed up. It seems needless to state that we were most careful to cleanse the wound and to keep it clean. Dressings of corrosive gauze were applied and the patient returned to bed.

The morning after the operation the temperature was 101°, but it fell to normal under the influence of a purgative, and the following morning, forty-eight hours after the accident, the packing was removed. Now came a question. None of us could remember absolutely how many pieces were used. I should have known, but did not, and, instead, believed that there were two, but only one could be found by a careful search. We determined to await developments. The case progressed most favorably. The wound healed by first intention, except at a small point where the packing had projected and at which point a few drops of serum escaped daily. On the seventh day the stitches were removed, and our apprehensions were entirely allayed as to any foreign body being retained within the skull.

For ten days there was not a bad symptom, but on the eleventh day the patient was most peculiarly garrulous, irritable, and complaining. An eye-examination made by Prof. de Schweinitz showed evidence of increased pressure. The man passed a bad night, and on the twelfth day was restless, excessively talkative, complaining loudly and angrily, and asserting that people were in league to injure him. On the thirteenth day his mental condition was worse, and there was great rapidity of utterance, though no incoherence of speech or confusion of thought, which are so common in traumatic insanities. The patient asserted that he had heard people plotting against him the night before, and manifested plainly unsystematized delusions of persecution. During all of these days there was no fever, and the wound looked perfectly healthy. The emotional disturbance, hallucinations, and restlessness, with the unsystematized

nature of the delusions forced us to a diagnosis of mania. We determined to look again for a possible piece of packing, opening the wound if necessary. The small sinus was enlarged, and I took a probe broken across the middle of the eye, so that two arms were left on the shaft like the prongs of a fork. This I hoped would entangle a bit of gauze if any were left. It was passed between the bone and dura and caused to make a circuit, withdrawing it often to look for an entangled thread. This to our relief finally appeared, having been drawn from the direction of the lateral sinus. A pair of forceps was introduced, the foreign body caught, and a double piece of packing, eight inches in length and an inch in width, withdrawn. The packing was absolutely sweet, contained no pus, and its withdrawal was followed by no discharge. That night the patient slept well, and in the morning presented no excitement or anger whatever, and had lost his persecutory delusions. He went on to complete recovery, and was discharged, cured, twenty-one days after the accident, and eight days after the removal of the gauze.

This case teaches us that no uncertainty should ever exist about the number of pieces of packing introduced into a wound. Only one piece should ever be employed. It would have been better in the case reported, when we found ourselves undecided, to have opened the wound instead of waiting. No harm would have come from opening, while great harm might have come from waiting. This plug of gauze, of such large size, and wedged as it was between the bone and dura, must have exerted great pressure, and yet so tolerant was the brain that ten days passed without a sign of its presence, of which the eye-examination gave no hint. The amount of pressure to which the brain was subjected, without being lashed into complaining, suggests the probable existence of some other factor than pressure when cerebral symptoms accompany depressed fracture. The onset of mania, with delusions, as a result of pressure, and the immediate relief of the symptoms on relief of the pressure, is to me a novel observation. The certainty of our antisepsis was well demonstrated. Had we failed in it disaster would have been almost inevitable.

This case shows further, if any further demonstration is needed, that all compound fractures of the skull, and all fractures with marked depression, require trephining, whether cerebral symptoms are present or not. In this patient cerebral symptoms were entirely absent, and yet there was extensive splintering of the inner table and progressive bleeding between the dura and the bone, which, in a short time, must have caused symptoms of the greatest gravity.

CYSTOTOMY FOR RELIEF OF STONE IN AN INFANT SEVENTEEN MONTHS OF AGE, FOLLOWED BY RAPID RECOVERY.

BY CLAUDIUS H. MASTIN, M.D., LL.D. UNIV. PENNA.,
OF MOBILE, ALA.

As so much has been written during the last few years upon the subject of stone in the bladder, and the various methods adopted for its relief have been so fully and clearly discussed, it seems a work of supererogation even to report an operation for so common an affliction. In this instance, however, the extreme youth of the little patient, together with the rapid recovery which he made after being operated on, induces me to think that it will not be uninteresting to the surgical readers of THE NEWS if I briefly lay before them the details of the case.

The impression commonly exists that stone is more frequently found during the years of childhood than in youth or adult life. Such, however, is not correct, for a careful analysis of facts, together with properly corrected tables of statistics, will prove the contrary. Although stone is often found in children under three years of age —even in tender infancy, as it is in those of the most decrepit old age—still it is not, by any means, more common in childhood than in adult life!

The difficulty of accurately determining the frequency of the disease at different ages has resulted from the want of care exercised by statisticians in distinguishing between *absolute* and *relative* numbers, for it is evident that if we are to ascertain the real proportion of a given disease at different ages, we must include persons not operated on, as well as those that have undergone the operation of cystotomy; having done so, we shall obtain a very different result from that which is furnished by the present existing tables of frequency. For example, if all persons under the age of twenty years were afflicted with any one disease, and all persons over seventy were afflicted with the same complaint, it is evident that the liability would be the same, although the absolute number of persons attacked would be very different. If, then, we construct our tables after this method, including those operated on, as well as those not subjected to any treatment, we shall find that children and young persons are less liable to calculous disorders than has been stated; whilst in reality, from the age of twenty the tendency increases in a remarkable degree to the end of life.

It is not common to find children under the age of three years the victims of calculus, although none is exempt, even from birth to old age. The trouble has been found to exist in intra-uterine life, as is evidenced by the case of Langenbeck, in which he found a calculus in a six months' male fetus; also the case of Stahl (reported in his *Diss. de Morb. fœtuum in Utero Materno*), in which he found a calculus the size of a peach-kernel in an infant of three weeks, the child having suffered great distress from its birth with every act of micturition. Gayer also reports a case which had suffered from birth with all of the symptoms of stone, and which was operated on at twelve years of age, when the stone was found to be so large that it could not be removed until broken up; the fragments were found to weigh ten ounces. Similar cases are reported by various authors who have found stone in young children; but the youngest patient, of which I have any knowledge, which has been subjected to the operation of cystotomy is the case reported by Mr. William Coulson, of London; it was a little boy eighteen months of age upon which he operated, but in the mention of the case he does not state the result of the operation, and I cannot say whether it was or was not successful. Some years ago I was called to a child aged six months, and suffering from retention of urine. Upon introducing a very small gum catheter, I met an obstruction in the membranous urethra, which proved to be due to a calculus about the

size of an ordinary garden pea. I removed it through an incision in the perineum, and the child made a rapid and permanent recovery.

About the middle of June of the present year, during the intense hot spell of weather we were having at that time, a miserable, wizened little child was brought to my office from the adjacent country, for advice and treatment for an attack of "summer complaint," as it was diagnosticated; "entero-colitis" being always prevalent at that season of the year, and hence the mistake.

I found the child straining in its efforts to pass its urine, the genitals chafed and sore, the rectum prolapsed, and all the rational symptoms of calculus present. Under the influence of chloroform, the sound readily detected the stone, and an operation for its removal was advised. In the condition of the child, I did not think it advisable to operate until after a reasonable amount of preparatory treatment had been instituted. To this end, I ordered tepid baths, anodyne enemta, with a solution of sodium bicarbonate and boric acid, to neutralize and render aseptic the urine; this to be combined with a tonic course of the syrup of the iodid of iron, on account of the strumous condition of the child.

The history given was to the end that, last February, for the first time, it was noticed the child had frequent and violent attacks of pain whenever it attempted to pass its urine, and had steadily and increasingly grown worse until it was brought to me in June. The attending physician had resorted to all manner of carminatives, but without avail; and so the parents concluded that none of those "mixtures" would cure the colic, and the child was brought to me as a *dernier ressort*, just as surgeons so frequently receive cases of "obscure disease."

The parents were "well-to-do" farmers, residing in the rural districts, with a family of six or seven children, of which this was the youngest—seventeen months of age. The family history showed no diathesis to which this disease could be traced, if we exclude rheumatic troubles which had been prevalent in some of the ancestors. The mother was deaf, and it was, on that account, difficult to gather a clear history of her family.

After a few days the child had so improved in condition that I thought it best to do the operation, and let it be taken from the city to the fresher air of the country.

On the 19th of August, assisted by Dr. Wm. M. Mastin, who held the staff for me, and other professional friends who were present, the infant being under the influence of chloroform, I performed the median operation and quickly entered the bladder. The stone was very readily found and grasped by the forceps. Not having in my collection a pair of stone-forceps small enough for the case, I was compelled to use a pair of polypus-forceps, having roughened ends; and with this the stone was crushed upon very slight pressure. This being an unavoidable accident, it is not possible for me to give the exact size of the stone, which was removed as a mass of débris. From the bite of the forceps when the stone was first seized, I estimated it to be about as large as a peach-kernel, and the mass of detritus washed out, together with the débris removed by the forceps, would indicate a close approximation to that size. The little fellow very soon reacted from the anesthetic, and within a few hours was as comfortable as he had been previously to the operation. The urine was voided both through the wound and through the natural passage. On the night of the day upon which the operation was performed the child had a temperature of 104° F., which speedily subsided under a small dose of phenacetin, and the next morning he was bright and comfortable. No inflammation followed the operation, and for three days the urine lessened day by day in its passage through the wound until the fourth day, when the incision had so nearly healed that I thought it safe to permit the parents to take him to his home in the country. I have since then heard from them that he has been perfectly relieved and is improving rapidly. The case is an interesting one, both on account of the extreme youth of the patient and the rapidity of recovery after the operation, the patient being discharged on the fourth day, with the wound almost entirely healed and the act of micturition normal.

This case will illustrate the value of "median perineal cystotomy" *in children*, and go to show that it is an easier, safer, and more rapid procedure than any one of the other operations now in vogue.

Uric-acid formations are the most frequent, but, without an analysis, I am inclined to think from the appearance of the fragments that the concretion in this case was made up of ammoniaco-magnesian phosfates.

HOSPITAL NOTE.

THREE CASES OF ANEURISM OF THE AORTA.

German Hospital, Philadelphia.

SERVICE OF ADAM TRAU, M.D.

[Reported by ALFRED HAND, M.D., Resident Physician.]

CASE I. ANEURISM OF THE AORTA; DEATH FROM HEART-FAILURE.

B. S., female, thirty-seven years of age, born in Ireland, married, was admitted July 17, 1893. No family history could be obtained, and all the previous personal history that could be elicited was that four years ago she had had rheumatism, and about six months ago three profuse uterine hemorrhages.

Her present illness dated back six weeks, during three of which she had been in bed. It began with loss of appetite and weakness; then diarrhea and vomiting set in, with pain in the abdomen; she had coughed some, and expectorated some white mucus. There had been neither nose-bleed nor headache.

When admitted she was evidently in a precarious condition. Her face was cyanotic, the pupils were dilated, breathing was labored, and she had a harsh, dry, brassy cough. She was in somewhat of a stupor, but could be roused easily, and would answer questions intelligently. Her temperature was 101.6°, but at evening it came down to normal. The pulse was a typical water-hammer pulse, the rate being 116 per minute. The apex-beat was in the sixth interspace, outside the nipple-line. At the aortic cartilage there were two murmurs—one systolic, transmitted into the carotids, and one diastolic, heard all over the precordia. There was a systolic murmur at the apex transmitted toward the axilla, and failing compensation was diagnosticated. The lungs were clear,

with the exception of moist râles posteriorly. In the left hypochondriac region there was a large area of dulness extending a little below the costal border, while in the right hypochondriac region the dulness was of such slight extent and situated so far toward the mid-axillary line as to suggest a transposition of the liver and the spleen, but after careful examinations it was seen that the liver-area was much shrunken, while the spleen was enlarged.

Throughout the duration of the case there was albuminuria, with hyaline and granular casts.

The daily notes of the case are as follows:

2d day. The diarrhea has ceased, but the pain in the abdomen and vomiting continue; temperature from 99° to 100° F.

3d day. The vomiting has yielded to treatment; patient apparently moribund, but can be aroused for a few seconds at a time; respirations 8, pulse 84, temperature from 99° to 99.8° F.

4th day. Condition same as yesterday, but the abdomen is very tympanitic; expression of the face like that often described as typical of peritonitis; respirations 10, pulse 95, temperature from 99° to 99.6° F.

5th day. The bowels were moved once during the night; distention of the abdomen is excessive; respirations 10, pulse 128, temperature from 100° to 102° F. In the evening, while watching her closely, it was observed that during the pauses of respiration, there could be heard, when standing at the foot of the bed, a to-and-fro sound identical with that heard when a stethoscope was applied over the aortic cartilage. It very much resembled the sound made by a "donkey-engine."

6th day. At 11 A.M. the patient died, with a temperature of 106.8° F.

At the necropsy it was found that the abdominal distention was probably paralytic, as there was neither peritonitis nor obstruction. The liver was contracted, weighing 950 grams. The lobules were prominent, and the surface was very much like that a of placenta. The spleen weighed 500 grams. The kidneys were congested. The heart weighed 400 grams; the valves were not diseased, but the aortic semilunars were rendered incompetent by a dilatation of the orifice due to an aneurism which extended from the origin of the aorta through the transverse arch. The dilatation of the aorta was uniform, and there were no clots; spots of beginning atheroma were numerous.

CASE II. DOUBLE ANEURISM OF THE AORTA, WITH RUPTURE EXTERNALLY.

M. K., male, aged forty-eight years, married, white, born in America, a bricklayer, was admitted October 25, 1892. His history was that three years before he had had a right-sided empyema, which was tapped. A rib was resected, and a drainage-tube inserted until the discharge ceased and the side healed. After this, he was in good health until about six months ago, when he began to be troubled with shortness of breath and painful deglutition. In a short time he noticed a small tumor close to the right border of the sternum. This steadily increased in size, and the difficulty in breathing and swallowing became greater. The appearance and growth of the tumor were marked by no special pain over it. He denied having had syphilis.

On admission he was found to have a pulsating tumor, about the size of a hen's egg, over the third and fourth right costal cartilages, spreading also over the ends of the ribs. There were no heart murmurs, nor any thrill nor bruit over the tumor. The radial pulses were equal, and the pupils regular. Resonance was impaired over the right lung, and the respiratory sounds were feeble, with prolonged expiration. These phenomena, with his former history, raised the question of an *empyema necessitatis*, but owing to the expansile pulsation of the tumor, the pain on swallowing, and the wheezing breathing, the diagnosis was made of aneurism of the ascending arch of the aorta.

For about five months the man's condition remained practically the same, the tumor growing a little larger. The patient was very restless, and could sleep scarcely more than two hours in the twenty-four. At times the tumor would recede somewhat into the chest, and he would then imagine himself better, but the difficulty in breathing and swallowing would be greater.

He left the hospital for two months in the spring of 1893, but came back in June, with the tumor projecting three inches from the chest-wall and extending over an area six by four inches. The overlying skin had ulcerated, and from the surface blood shortly began to ooze. About a week later the rupture came, the stream of blood being at first about a quarter of an inch in diameter and of sufficient force to strike horizontally the wall four feet away. At least twelve minutes elapsed from the first spurt until life was extinct.

The post-mortem examination disclosed an immense aneurism of the ascending arch which had perforated the chest-wall, with erosion of the third and fourth ribs. At its exit from the chest it was constricted like an hour-glass, so that there were two large tumors, one on the inner side and the other on the outer side of the anterior chest-wall. A finger could be introduced through the point of rupture into the outer sac, and a soft clot and the perforation in the chest-wall could be felt. The inner sac could be explored by passing the finger up through the left ventricle into the aorta, which was lined with calcareous plates in its first part. The inner tumor also contained a large, soft clot. On the upper posterior part of the transverse arch was a sacculated aneurism about two inches in extent and an inch deep, containing a large lamellated clot. This aneurism was probably the one which gave rise to the difficulty in breathing and swallowing. The heart was normal, no valvular lesion existing. The left lung was normal, but the right was largely solidified from compression.

CASE III. DOUBLE ANEURISM OF THE AORTA, WITH RUPTURE INTO THE TRACHEA.

C. K., a male, forty-two years of age, unmarried, white, born in Ireland, a laborer, was admitted June 20, 1893. His family history was negative. He himself had never been sick. He contracted gonorrhea and syphilis about sixteen years ago. Last October he began to have sharp pains about the left chest and upon the left side of the face, which were thought to be due to a severe neuralgia. The pains would not be felt while his mind was engaged on his work, but when at rest he would feel them severely. They ceased about four months before admission, and did not trouble him afterward. For three or four weeks before admission he had had a dry

cough, laryngeal, and brassy in character, and a feeling as of something sticking in his throat. He had also been spitting blood for a few days, and exertion would make him short of breath. He had noticed at times unilateral sweating on the left side of the face.

Examination showed equal pupils; unequal radial pulses, the right being normal, the left almost imperceptible; veins around the clavicles dilated; heart-sounds normal; in the left carotid a systolic whiff not heard elsewhere. With both acts of respiration a wheezing sound could be heard at a distance of several feet. Examination of the chest was negative, except that there was dulness over an area with a radius of from an inch to an inch and a half from the left sterno-clavicular articulation. From this, the diagnosis was made of an aneurism of the transverse arch of the aorta, involving the origins of the left common carotid and subclavian, and pressing back on the trachea.

For three weeks the man remained apparently in about the same condition, occasionally spitting a little blood. The fatal hemorrhage came one morning as he was sitting quietly in a chair, after having risen and dressed himself.

The autopsy revealed a large aneurism of the transverse arch of the aorta, equal in size to the heart, beginning just at the origin of the innominate and extending to the descending aorta. It was filled anteriorly with a large lamellated clot, which was softer posteriorly, where there was a channel for the blood-current. The aneurism pressed posteriorly against the trachea, into which it had ruptured through a small opening about an eighth of an inch in diameter and an inch and a half above the bifurcation. On the thoracic aorta, just below the descending arch, there was a sacculated aneurism two and a half inches long and one inch deep, projecting backward. It was lined on the inside with calcareous plates and contained a small clot. The lungs were almost filled with blood, which had flowed down the air-passages, and a large clot occupied the trachea. There were no valvular lesions of the heart.

MEDICAL PROGRESS.

Ureteritis Membranacea.—JAKSCH (*Zeitschr. für klin. Medicin*, xxii, 6; *Practitioner*, No. 302, p. 131) has reported the case of a woman, forty-five years old, who seven years previously suffered from pain in the back and right loin. Soon afterward there appeared pain in the left loin, sometimes attended with vomiting. Two years later a small calculus was passed, with severe colic, referred to the left kidney. Some relief followed this, but attacks of colic, vomiting, muddy urine, and painful micturition occurred at intervals, accompanied occasionally by rigors and fever. The urine was neutral in reaction, contained some albumin, and also some unbranched, translucent, ribbon-like structures about four inches long, arranged spirally. These bodies varied a little in breadth and resembled the similar appearances encountered in the sputum and feces. This resemblance was still closer in that they consisted of mucin and fibrin. Microscopically, they were like Curschmann's spirals, but without the central thread. On the surface could be seen flattened epithelial cells, singly and in groups, such as are found in the bladder and ureter, amorphous masses and crystals of calcium sulfate. Throughout the sediment were scattered amorphous masses composed of calcium carbonate, fine crystals of triple phosphate, well-formed crystals of calcium sulfate, and epithelial cells from the ureter and bladder. Neither cells from the renal tubes nor colorless corpuscles could be found. After rest in bed, the pain in the loin disappeared and the condition of the urine changed in a few days, the spiral formations ceasing to appear and the crystalline forms becoming fewer in number. Sulfuric acid lemonade was administered, and the urine soon became acid, and in a few days the patient was dismissed, much improved.

Varicose Veins in the Arms.—DUTTON (*Lancet*, No. 3648, p. 248) has reported the case of a healthy-looking woman, sixty-five years old, who presented herself on account of an acute attack of eczema of the arms, legs, chest, and abdomen. Until the age of twenty-four the woman had been engaged in housework, doing a good deal of washing. Her work had been rather hard, and washing occasioned swelling and aching pains in the arms. At the age of eighteen, swellings were observed in the arms, which gradually increased in size. Various forms of treatment had been employed, but without avail. Both forearms and the arms for a distance of three inches above the elbow presented soft, painless, movable, superficial knotted masses of various sizes, from the diameter of a pea to that of a walnut. The varicosity did not appear to have attacked the chief superficial veins of the arms, but rather the ramifications of the veins, giving rise to well-defined masses. On vigorous flexion and extension of the forearm the superficial veins swelled to an unusual size. The patient stated that she had often noted the lumps to have a blue appearance, especially after a day at the wash-tub. No definite cause for the condition could be found. There were no signs of pressure; no enlarged glands in the axilla; no signs of intrathoracic tumor or aneurism; and no cardiac lesion. A mild bronchitis existed, but the general health was good. The condition gave rise to no special inconvenience beyond a considerable amount of aching pain after a hard day's work. There was also a considerable degree of varicosity of the veins of the legs and slighter varicosity of the veins of the thigh.

Congenital Fistula of the Upper Lip.—FEURER (*Archiv für klinische Chirugie*, Bd. xlvi, H. 1, p. 35) has reported the case of a man, twenty years old, who from birth presented a fistula of the upper lip, a little to the right of the filtrum. The fistula terminated upon the mucous membrane of the lip, which extended upward to a greater extent than normal. A small amount of slightly turbid fluid resembling saliva continuously escaped in small drops from the external orifice, and upon microscopic examination was found to contain squamous epithelium. The tissues about the fistula seemed a little more dense than usual. A sound introduced into the opening passed upward and somewhat backward, and encountered an obstruction at the level of the lower margin of the right nasal orifice. There was no other deformity of either soft or hard parts. The constant discharge of fluid constituted a source of annoyance and the fistula was removed by way of the mucous surface of the lip. Upon

microscopic examination the lining membrane of the fistula and the surrounding tissue were found to correspond with the tissues of the interior of the mouth.

Enlargement of the Spleen as a Symptom of Chlorosis.—In view of statements that the spleen undergoes no enlargement in cases of chlorosis, CHVOSTEK (*Wiener klinische Wochenschrift*, 1893, No. 27) made some observations upon this point at the second medical clinic of the Vienna General Hospital. In fifty-six cases examined with this end in view it was found that there was demonstrable enlargement of the spleen in twenty-one, usually of moderate degree. That the enlargement was not accidental or due to antecedent conditions not associated with the chlorosis was shown by the fact that in some cases the enlargement subsided in correspondence with the improvement in the general condition.

THERAPEUTIC NOTES.

The Treatment of Goiter by Massage.—SZUMAN (*Münchener medicin. Wochenschr.*, 1893, No. 31, p. 583) has reported the case of a girl, nineteen years old, who had presented a goiter from the age of eleven, and which had progressively increased in size from the period of puberty, at thirteen. For two years there had been, besides, complaint of weakness of the right hand and forearm, with occasional spasm. These symptoms were ascribed to overuse of the hands in sewing and knitting. The patient was also susceptible to catarrhal conditions of the eyes, nose, and throat. The girl's father likewise had a goiter. The patient was well nourished, and presented no lesion of heart or lungs. Both lobes of the thyroid gland were enlarged, and firm in consistence. The condition being believed to be a hyperplastic proliferation of the tissue of the thyroid gland, with increase of the cells of the follicles, massage of the neck was instituted. The patient being seated, the head was inclined slightly backward, and the throat well exposed. The masseur stood behind the patient, and applied the anointed fingers of the two hands in the groove below the lower jaw. The movements were made slowly, synchronously with the respiratory movements, and with varying pressure. The patient was directed to inspire deeply, for the purpose of creating a negative pressure in the thorax. By the aspiration of the thorax and the compression of the veins, the return of the venous blood to the heart was doubly facilitated. The lymphatic circulation was at the same time stimulated. Each sitting occupied a period of ten minutes. Improvement soon set in, and there was shortly an appreciable reduction in the size of the goiter. The patient failed, however, to continue the treatment until the total disappearance of the enlargement.

Poisoning by Chloralose.—LANG (*British Med. Journal*, No. 1700, p. 233) has reported the case of a middle-aged woman who, it was said, had taken an overdose of a soporific. She had been in the habit of taking drugs for sleeplessness, but it could not at the time be learned what drug had been taken or in what quantity. The woman was semi-comatose. She showed signs of irritation on attempts to awaken her, but she could not be roused sufficiently to give an intelligible answer to questions. The face was congested and bluish; the pupils equal and somewhat dilated; the breathing normal; the pulse 60, regular, fairly full, and of high tension; and the skin moist. On a table by the bed were an empty box, which had contained cachets of three grains each of chloralose, and a bottle of syrup of chloral, from which about six drams were missing. The stomach was at once washed out, the fluid returning clear and without odor. An enema of hot coffee was also given. The woman soon became sufficiently conscious to relate that she had taken only three cachets; that she had often taken two, and that on more than one occasion three cachets, without ill-effects. In a little while she was quite well, except for a slight headache. She stated that she had taken hypnotics for many years. Once before she had suffered from a very large dose of chloralose, but quickly recovered after an emetic. On the present occasion she had taken two cachets at 1 A.M., and a third about an hour later. She thought that she had slept for a short time after taking the cachets, then felt ill in an indefinite way, tried to open the door, which was locked, and then fell down and was found there unconscious at 4.30. It is suggested that the untoward symptoms may have been due to rapid absorption from the empty stomach or to impurity in the drug.

For Tuberculosis.—PICOT (*Deutsche med. Wochenschr.*, 1893, No. 30, p. 731) recommends a mixture of guaiacol and iodoform in sterilized olive oil for injection in the treatment of tuberculosis. Every cubic centimeter (16 minims) contains 0.01 (0.15 grain) of iodoform and 0.05 (0.75 grain) of guaiacol. The mixture is clear; its injection occasions no pain, is free from danger, and is reputed to have produced the same results as tuberculin and other agents. It is not considered a panacea for tuberculosis, but an adjunct to fresh air, sustained nutrition, massage, and gymnastics. Its use has been followed by disappearance of the cough, relief from expectoration, and cicatrization of cavities. Fever and night-sweats disappeared, so that curative results were obtained not only in the first, but also in the second stage of the disease.

The Treatment of Hemoptysis.—EKLUND (*Centralbl. f. die gesammte Therap.*, August, 1893, p. 503) maintains that nothing is more dangerous in case of hemoptysis than the common practice of administering cold drinks or bits of ice. The cold causes increase in the bleeding; by irritation of the vagus, cough is induced; and by contraction of the gastric vessels the flow of blood to the lungs is increased. Eklund, therefore, advises the administration of warm and mucilaginous drinks and the application of an ice-bag over the apex of the lung from which the hemorrhage is believed to have taken place. Besides, he directs the taking, three or four times a day, of three grains of quinin sulfate and a grain and a half of ergotin in pill form.

Thryoid-Therapy for the Cachexia Strumipriva.—At a recent meeting of Swiss physicians KOCHER (*Corresp.-bl. für Schweizer Aerzte*, 1893, No. 15, p. 529) presented five cases of the cachexia strumipriva in which treatment with thyroid extract had been followed by results entirely comparable with those obtained in cases of myxedema.

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TUBERCULOUS PLEURISY.

INASMUCH as at this time the attention of medical men in all countries is being more than ever attracted to the etiology and pathogenesis of the inflammations of the serous membranes in general and of the pleura in particular, the delivery at Boston of the SHATTUCK Lecture upon the subject of "Tuberculous Pleurisy," by PROFESSOR WILLIAM OSLER,[1] of Baltimore, has come most opportunely. Whereas a few years ago clinicians carried to an extreme the idea that nearly all of the so-called idiopathic pleurisies were tuberculous in origin, at the present time and with the reaction following on the more exact bacteriologic researches, there is a tendency perhaps to ascribe to other microörganisms, *e. g.*, the micrococcus lanceolatus, too imporant an etiologic rôle.

As the field of medical knowledge grows wider, old facts reappear before us disguised in a different garb; we look at objects through tinted spectacles and are prone to give them color and shape from our glasses, only too often to the misrepresentation and distortion of what actually exists. It is at these times that we need the calm and impartial judgment of the experienced observer to correct our visual aberrations, and to prevent us, as the transformation proceeds, from losing sight of old and well-established truths in the rush after new ideas and conceptions.

The SHATTUCK lecturer for 1893 has based his remarks upon the firm foundation of observed facts, and has combined with ample illustration of the different clinical types a careful description of the pathologic changes found in the different forms of tuberculous infection of the pleura.

That a large percentage of cases of pleurisy are definitely tuberculous he shows by an analysis of 101 successive cases of pleurisy that came to autopsy. There were in thirty-two fresh miliary granulations, caseous masses, or diffuse fibro-tuberculous membranes. In eleven of these there were miliary tubercles in the pleura; in eight there was empyema (singularly enough in every instance associated with pneumothorax), and in thirteen the exudation was sero-fibrinous and the pleural leaflets were more or less thickened.

Clinically, the tuberculous pleurisies are divided into two great classes: (1) the acute tuberculous pleurisies, and (2) the subacute and chronic forms. The acute variety includes three distinct groups: (*a*) Acute tuberculous pleurisies that subsequently run a chronic course. In these the onset may be abrupt and resemble a pleurisy *a frigore*, the patient being of good physique and of good family history. The subsequent history alone clears up the case. (*b*) Secondary and terminal acute tuberculous pleurisies in which miliary tubercles appear in the pleura as a result of direct extension, almost always from foci in the lung, and not necessarily associated with general miliary tuberculosis. That not all pleurisies terminating in pulmonary tuberculosis are tuberculous is shown by eleven of the 101 cases in which the causes of the pleurisy were organisms other than the tubercle-bacillus. (*c*) One of the most interesting of all of the forms described is the acute tuberculous suppurative pleurisy, in which there are in the pleura ulceration and suppuration due to the tubercle-bacillus. These cases have actually been looked upon as instances of mixed infection with pyogenic organisms, but in a case of multiple abscesses in the pleura in a young girl, reported by the lecturer, cultures made from the pus remained sterile, while cover-slip preparations showed an extraordinarily large number of tubercle-bacilli. This favors the theory that the tubercle-bacillus sometimes acts as a pyogenic organism, but until further examples are recorded it will probably be safe to still regard such cases as instances of mixed infection, the sterile

[1] Boston Med. and Surg. Journ., 1893, Nos. 3, 4, 5, and 6.

cultures perhaps being accounted for by the death of the pyogenic bacteria before the death of the patient. In any case this type of acute tuberculous pleurisy must remain a most interesting and important one.

Turning to the subacute and chronic forms, DR. OSLER divides these also into three groups: (*a*) those with a sero-fibrinous effusion, which may be primary (when they are prone to be particularly insidious and are likely to be overlooked) or secondary to lung-tuberculosis, when they are as a rule easily diagnosticated; (*b*) those with a purulent exudate, when the onset is subacute, and the course is chronic and latent, usually associated with pneumothorax; and (*c*) the chronic tuberculous adhesive pleurisies, the special feature in these being the extensive, sometimes enormous, thickening of both layers of the pleura.

Attention is drawn to those less usual cases of general tuberculosis of the serous membranes that present a fairly distinctive clinical type, in which the infection attacks the serous membranes one after another, or in which the pleura and peritoneum, and at times the pericardium, may be affected almost simultaneously. The clinical classification of BOULLAND is closely followed here, and the obscurity of the affection, together with the protracted course, with periods of improvement and often with little or no fever, are dwelt upon. All of the clinical types are illustrated by protocols of cases that have been under the lecturer's observation.

Passing on to the general pathology of the tuberculous pleurisies, DR. OSLER deals at considerable length with the avenues of infection, describing the different routes by which the tubercle-bacilli gain entrance to the pleura. The majority of cases, it would seem, arise through direct infection from the lung, a superficial focus there extending directly to the pleura. In very many cases, however, including those of primary tuberculous pleurisy, the bacilli reach the pleura through the lymph-channels, by inhalation and deposition on the bronchial mucous membrane and transportation along with dust-particles through the interstitial lymph-spaces, or by infection through the lymph-channels from the neck (scrofulous glands, carious bones), or by extension upward from the peritoneum to the diaphragmatic pleura.

While in some cases the diagnosis is easy, in many it is extremely difficult to decide that a given pleural exudate is positively tuberculous—a fact which is not surprising when we consider the very diverse clinical variations met with. The appearance of the individual, his previous history and that of his family, the mode of onset, the course of the affection, and the character of the exudate—all have to be carefully considered, but often none of them may even be suggestive—or when they lead to suspicion may be misleading. We are recommended to carefully inspect the different groups of lymph-glands contiguous to the pleura, and to examine the expectoration of the patient repeatedly for tubercle-bacilli. The bacteriologic examination of the exudate, which has been so much insisted upon of late, is fully dealt with, and when inoculations into ordinary culture-media remain sterile there is presumptive evidence in favor of a tuberculous pleurisy. The examination of cover-slip preparations, except in the case of a purulent exudate, rarely permits the demonstration of tubercle-bacilli. The inoculation of guinea-pigs with portions of the exudate probably offers the best chance of determining their presence or absence. In cases of empyema a tuberculous process is often complicated by infection with ordinary pyogenic organisms.

The diagnostic value of injections of tuberculin is regarded as very uncertain, and a case is reported in which a marked reaction followed such an injection, the autopsy subsequently showing the case to have been carcinomatous and not tuberculous at all. The diagnosis in the chronic forms, with sero-fibrinous exudate and thickening of the pleura, in which there is persistent flatness at the base of the lung, is peculiarly difficult, but the recurrence of an effusion in spite of frequent aspirations should make us suspect a tuberculous process.

The limits of this article will not permit us to more than mention the therapeutic suggestions laid down. The indications are twofold: (1) to limit and control the exudate and to endeavor to promote absorption, and (2) to improve the general condition of the patient and increase his powers of resistance, in order if possible to bring about healing of the tuberculous lesions. After the acute stage is over, during which rest and dry diet are desirable, repeated aspiration being resorted to if necessary, we are to endeavor to promote nutrition by careful feeding, a well-ordered life, perhaps by a change of climate, and by the exhibition of suitable tonics. Pulmonary gymnastics may be of value when there is retraction of the chest. The purulent cases, in which the condition of the patient permits, are of course to

be turned over to the surgeon for evacuation and thorough drainage. The lecture is brought to a close with a quotation from SIR ANDREW CLARK: "When we have a patient with basic fibrinous pleurisy let us hold him fast, restrict his freedom, and treat him carefully until every remnant of it is gone."

THE PROGRESS OF CREMATION.

CREMATION is like an epicure's dish, which must be tasted often before it can be liked, and the first taste thereof requires fortitude and high-thinking. Cremation has been opposed quite needlessly as a violation of law, of custom, of religion, etc. It deserves none of these censures, however, and is unmistakably growing into favor in Europe and America. In Germany,[1] for instance, in populous countries in particular, it is more frequently practised than elsewhere, perhaps from necessity. In Gotha alone during the past fifteen years there have been nearly twelve hundred cremations. It is found to be a decent, honorable, and salubrious method of disposing of the dead. It is easy and not expensive. Nor is this all. The usages of the churches, the rites that make up a Christian's obsequies, are not neglected. The burial service is commonly read; and we can scarcely resist the evidence that in the eyes of the Church there can be nothing impious in this mode of sepulture.

We are indebted to MR. AUBREY RICHARDSON for the ability to make these statements with a clear conscience. In an excellent little book recently published and entitled *The Law of Cremation*,[2] he furnishes ample proof of what has just been said. What, for example, can be more satisfactory than the following passage describing the method of procedure at Gotha: "The crematorium, which is constructed after the design of HERR SIEMENS, Engineer of Dresden (*regenerative system* with gas-furnace), stands in the new cemetery at Gotha. All the apparatus is situated underground, beneath the chapel floor, and is so arranged that the coffins can be lowered gradually into the receiving-chamber during the reading of the burial service, and mechanically passed on into the furnace itself" (p. 135). Such obsequies are not unpleasing, and we hardly think that any imagination will startle at these details.

The selection of the site of a crematory is a point of the utmost consequence to the public. For, although the combustion of a corpse may be accomplished in a rapid, inoffensive manner, as far as disagreeable sights and smells are concerned, yet this would not always be so if no proper rules were formulated and observed in so important a matter; and the proximity of a crematory can hardly be contemplated with any other feeling than aversion. The sixty-fifth article of the Italian Burial Law, which directs "that crematory furnaces must not be erected without the walls of public cemeteries," is wisely followed by the law or custom of most countries.[1]

What are the objections to cremation as a form of burial? We consider the reasons *against* it rather than the reasons *for* it, because the latter are too obvious to need discussion. The chief objection is that mankind in Christian countries has for centuries preferred to bury its dead. CONSTANTINE strongly condemned the practice of cremation on religious grounds. NAPOLEON rejected it after mature deliberation. The fact that men have a prejudice in favor of burial, a prejudice to which they adhere with passionate hereditary instinct, is a positive objection to cremation. A scruple, regarded as pious and honorable, is no light thing. Men who are under the influence of this scruple will always find in cremation something unspeakably revolting, some taint as of impropriety or barbarism, some want of respect for the dead and for the religious feelings of the living. The practice, they will say, has been more frequent with barbarous than with civilized races. The savage and superstitious Carthaginians adopted it. It was an immemorial custom with the North American Indians; so, too, with the Druids. The great races of antiquity condemned it. The Jews and Egyptians practised it not at all; the Greeks but seldom.

Such prejudices, indeed, are wholly groundless. Yet, as long as public sentiment is of this mind cremation cannot be popular, cannot certainly be enforced by law.

The objections so frequently urged against cremation—its difficulty and expense, can scarcely be maintained now. In fact, the practice is not more difficult and more expensive than ordinary

[1] Prussia is an exception.

[2] The Law of Cremation, by Aubrey Richardson, Solicitor. London: Reeves & Turner, 1893.

Mr. Aubrey Richardson is a son of the admirable writer and physician, Dr. Benjamin Ward Richardson, F.R.S.

[1] Op. cit., pp. 104, 105.

burial. The United States Cremation Company (Limited), whose regulations deserve to be carefully studied, requires but an advance of $35 for this purpose. A more important objection is that cremation may offer opportunities of destroying the evidence of crime. This objection, we are convinced, betrays a complete ignorance of the legal procedure of a cremation. For the law on this subject, the police regulations that everyone must observe where cremation is legally recognized, are much more efficient safeguards against crime and the concealment of crime than the regulations of ordinary burials. In England, where the practice of cremation is merely tolerated as not illegal, an enormous number of persons are annually buried without any medical certificate or inquiry whatever. In 1885 the number of these persons was 18,146; in 1886, 18,322; in 1889, 15,100. The number of exhumations ordered by the courts to detect poison has been less than one yearly. If cremation were universally adopted under the rules of the Woking Crematory, or better still of the Crematory Society of Zurich, such a state of things would be impossible.

The gist of the whole dispute between the advocates of cremation and their opponents seems to us this: Is cremation necessary in order to prevent the bodies of the dead from poisoning the living, and if so, when is it necessary? For obviously it is not needed in all cases and under all circumstances. In a country that supports but one person to the square mile it is not necessary. We should not think of enforcing it in the Highlands of Scotland, in Iceland and Scandinavia, or in Libya. What is the use of burning a dead body where there is no risk of contagion? The dead on the battlefield and the victims of a pestilence ought, we think, to be buried. When the population may be three hundred to the square mile we can easily imagine that cremation would be an admirable precaution. The purpose of cremation is, of course, to reduce a corpse to absolutely harmless ashes. The rapidity of the process, its completeness, too, recommends it. But though the combustion of a corpse is, beyond comparison, more rapid than its decay, yet the whole procedure of cremation is more complicated and requires more time than burial. Burial, indeed, is the most expeditious mode of sepulture. Under the law, a cremation can scarcely take place in less than two days, while a burial may be an affair of but a single hour. The point of chief importance is to remove the corpse as a source of contagion as soon as possible. In what way is this better accomplished than by means of burial? But it will be said that the speedy removal of the corpse, though a stern necessity in times of epidemic and something to be thankful for at all times, is not sufficient, as the risk of contagion is always present until the remains are wholly incorporated in earth.

Whether the interment of the whole corpse is so noxious a procedure admits of reasonable doubt. A writer in the *Annales d'Hygiene*, of recent date, infers from the results of excavations in Europe that the old method of burying in graves and trenches is, after all, the best and safest way of disposing of the dead. The evidence shows that infectious diseases are not engendered in those places. The earth purifies like fire. A cemetery properly situated is not a source of disease and contagion. A cemetery is objectionable when, as in very populous districts, it occupies a disproportionate amount of space or too little space. The latter condition is by far the worst. For the vast cemeteries, so common now, are merely a needless encroachment upon the living, but a cemetery too small is so frequently tenanted as to become a vile and contagious spot.

We revert to a consideration, often hinted at in the course of this paper, namely, that cremation should be adopted wherever it is a plain necessity. It is necessary whenever cemeteries are objectionable for reasons just given; whenever, as in Germany they become (as COLERIDGE expressed it) places not more dangerous to health than to morality; and finally, it may be said that cremation is intrinsically better than burial, for, though burial is seldom dangerous, cremation is never so; though burial is expeditious, cremation may be accomplished at least as rapidly; and the procedure of a cremation is even more decorous, is directed by even wiser legislation than the procedure of burial.

THE FIRST PAN-AMERICAN MEDICAL CONGRESS.

As these lines are being written the First Pan-American Medical Congress, with its twenty-two sections, is in session at Washington. From the reports that we have thus far been able to gather the meeting promises to be a perfect success, even beyond the most sanguine expectations of its organizers. Of the fruit that shall be borne it is of course yet too early to speak, but naught but good can be the outcome. Too much praise cannot be given to

those upon whom devolved the onerous duty of organization, who have labored so earnestly and so faithfully, and who must find in the success of their efforts a source of immeasurable gratification.

EDITORIAL COMMENTS.

An Impartial Judgment of Homeopathy.—The following quotation from the *Wiener medicinische Presse*, 1893, No. 30, p. 1202, must certainly be admitted as a dispassionate and judicial statement of the position of homeopathy, written without heat or partisanship, but in a spirit of actual fairness and honesty :

"The 2d of July marked the fiftieth anniversary of the death of Samuel Hahnemann, the founder of the 'homeopathic method of treatment.' In an article dedicated to the memory of Hahnemann, by L. Buechner, the distinguished author of *Force and Matter*, after an acknowledgment of Hahnemann's intellectual ability, it is stated that homeopathy is a suitable method of treatment for rich, indolent, nervous, egotistic patients, or such as have a dread of medicines, whose ills, great or small, disappear spontaneously, without medical treatment or with any form of treatment, and with whom the imagination acts as an important adjunct to the processes of nature. Homeopathy will therefore probably never entirely disappear, and is not to be denied a certain amount of credit, partly positive, partly negative. The patient believes that he will be helped by homeopathic remedies, and is really helped—partly in consequence of belief and partly by awaiting the natural outcome of his ailment during the continuance of the homeopathic treatment.

"In the hands of unprofessional persons prescribing their own homeopathic remedies, or in the hands of uneducated quacks, the method is capable of much harm, which it has doubtlessly accomplished in innumerable instances."

This judgment may not apply to the self-styled homeopathist who finds in sectarianism only a means to selfish ends. For him more drastic measures may be necessary; but if there be reputable men among so-called homeopathists, it is time for them to throw off their masks and repudiate a designation that among the discriminating has become a synonym for duplicity and false pretence.

Rhus Toxicodendron.—Apropos of the comment in THE NEWS of August 26, 1893, p. 248, we have received from Dr. John Aulde, of Philadelphia, a reprint of an interesting communication made by him to the *Medical and Surgical Reporter* for September 27, 1890, upon "The Use of Rhus Toxicodendron." Therein he points out the pharmacology, the properties, the physiologic effects, and the therapeutic applications of rhus. He advises the use of a tincture made according to the directions of the U. S. Pharmacopeia, from the fresh leaves gathered during the period of efflorescence. The dose ordinarily should not exceed half a drop three times daily. The drug is said to act as a cerebral stimulant and at the same time to possess the property of allaying the irritability of the sensory nerves. It is regarded as possessing also properties allied to those of an antiseptic, and has been found to act as an eliminant. The effects of lethal doses are said to be best antagonized by the exhibition of some preparation of lead. Rhus has been especially employed in the large and ill-defined group of diseases that are designated by the qualification chronic rheumatic, including arthralgias, myalgias, lumbago, wryneck, neuralgias, and other painful affections of uncertain nature. Hemorrhoids, varicose veins, and chronic cystitis, it is said, are usually promptly relieved by the exhibition of this drug. "In the treatment of erysipelas small doses seem to arrest the tendency of the eruption to spread, while the fierce character of the inflammation is subdued and the temperature and pulse fall. . . The chronic varieties of skin-diseases respond most readily to this drug, and especially the scaly forms; but it is useful in all cases dependent upon an unhealthy condition of the digestive tract." Certainly a drug that has such valuable properties and such a useful field of employment as are claimed for rhus should receive more extended application than has hitherto been given it.

The Noisome Noise of Unmusical Music.—THE NEWS is delighted with the responsive Amen ! in many lay and medical journals and from personal correspondents as regards its protest against the brutality of the noise-makers. It is a pity that we should end with protest only, and that legislative and police restriction cannot be made effective. Let everybody appeal personally and by letter to the proper administrative authorities and demand that illegal noises shall be stopped, and that those that are not absolutely forbidden shall be lessened. Medical societies should act as bodies and through committees to abate these nuisances. The hours for sleep should be kept quiet for the thousands of sleepers and and not monopolized by the half-dozen brawlers and howlers. There seems to be a tacit understanding on the part of the police that anything that a South-sea Islander or an Oriental would call "music" must be sacred, no matter how execrable and ear-splitting the din or the bawling. The police of Philadelphia would not think of stopping a crew of drunken singing rowdies, a darkey band, a French-harp fiend, an organ-grinder, or an accordion monomaniac from committing his crimes against health, no matter if the iniquities are carried out in what should be the stillness of Sunday or of the night. The air-beaters and ear-bangers have it all their own way, and if a lot of well-to-do folk meet together to eat and chat, they set a worthy example by having a band to scrape and blow musical sounds that not a single diner listens to for a second and which forces him to roar and bellow at the top of his voice to make his neighbor six inches away hear a spoken word. "What you talk about is music, but what you like is noise," said a wise man to his pupil, and it is true here and to-day.

Mental Suffering as an Element of Damages.—We speak of physical suffering, and of effect upon physical powers, but no one would claim for a moment that the two things are identical. Physical suffering may exist and be an element of damage, and yet there be no impairment of the physical power to earn money; and the physical power to earn money may be greatly impaired and an element for substantial damage, and yet there may exist

no suffering whatever. True, the two, for a time, at least, after an injury are usually present together, but there is no necessary connection between them. The same is true of the mental domain. Mental suffering may exist, and the mental powers—that is, the power to exercise the mental faculties for the purpose of earning money or otherwise—be in no manner affected. On the other hand, the power to thus exercise the mental faculties may be impaired or destroyed, and yet there may be no mental pain. Mental suffering is a proper element of damages, and the impairment of mental faculties is also a proper element, when claimed and proved. So holds the Supreme Court of North Dakota in Comaskey *v.* Northern Pacific R. R. Co. (55, Northwestern Reporter, 732). But it says that in an action to recover for personal injuries, when there is no claim in the complaint or in the evidence that the mental powers of the person suing were in any manner impaired by the injury, it is error for the trial-court to instruct the jury that in estimating the damages that they may take into account the effect of the injury upon the mental powers.

The Restoration of Hearing to the Deaf.—By analogy with the good results obtained in other forms of loss of function from disuse, it seems reasonable to hope that in some cases of deaf-mutism it may be possible to restore some degree of hearing, as well as of speech, by means of acoustic exercises. The idea is not a new one, and was long ago acted on. Upon this line of thought URBANTSCHITSCH (*Wiener klinische Wochenschrift*, 1893, No. 29, p. 525) has made observations upon a number of deaf-mutes who by methodic exercise not only regained the faculty of hearing vowel-sounds, but also acquired the ability to hear and to repeat whole sentences. Some of the cases, upon first examination, appeared totally deaf, hearing neither through the air nor through the bones of the skull. The restoration of hearing to an apparently totally deaf person obviously implies that there cannot have been actual deafness, but only an inability to properly interpret acoustic impressions. A development of the auditory sense was equally a result of the exercises, sounds that were previously not at all heard being readily recognized and differentiated. The exercises consisted in indicating by sign or symbol the sound to be made or the letter to be spoken. As at times they proved quite fatiguing, they were at first given for half an hour, daily, subsequently for an hour, preferably without the use of a speaking-trumpet.

Every Man His Own Physician seems to be the motto of the self-druggers, a brilliant company that is wonderfully increasing in numbers. Nowadays every toper knows all about chloral or carries in his vest-pocket his own supply of "bromidia." Every soda-water fizz-fountain has its array of prepared drugs ready for customers who habitually ask for the peculiar "tonic," or "sedative," or "corrective" that they know so well about. The accommodating druggist or fizz-water drawer will supply any possible defects of knowledge (or ignorance) on the part of the self-prescriber and recommend anti-pains or germicides galore, for a few cents, to be washed down with the universal fizz-water. Every hysterical woman has her very peculiar "smelling-salts," her pain-deadener, nerve-sedative, or headache cure, self-prescribed, *pro re nata* and *quantum libet* or *sufficit*. Sometimes the *quantum* is a little more than "*sufficit*," as in a recent case, in which, to "sober up," too much "bromidia" was taken, and the result was a sober-down into the grave. This reckless selling of dangerous drugs to Thomas, Richard, and Henry should be stopped. Medicine of the people, for the people, and by the people, is a dangerous sort of democracy.

The Identity of the Streptococcus Pyogenes and the Streptococcus of Erysipelas.—The morphologic resemblance between the pyogenic streptococci and the streptococci of erysipelas early suggested the possibility of their identity, but it was difficult to furnish the proof to substantiate such a belief. A case recently reported by KNORR (*Berliner klinische Wochenschrift*, 1893, No. 29, p. 699), of Berlin, would seem to furnish the necessary demonstration. The case was one in which in the sequence of an injury to the foot an abscess developed upon the thigh, and in the contents of which pyogenic streptococci were found. At a later date an area of erysipelas developed in the sacral region at the site of a small bedsore. The case terminated fatally, and after death examination of a bit of skin removed with suitable precautions from the erysipelatous area, disclosed the presence of streptococci that both in appearance and in behavior in cultures and upon inoculation were identical with those obtained from the abscess, while similar organisms could not be found in the healthy skin.

The New Pharmacopeia has been issued, and should be in the hands of every physician and pharmacist before the date at which it becomes official—January 1, 1894. We present elsewhere a brief account of some of the changes principally interesting to physicians. Pharmacists will find much more to study, perhaps to criticise. The Committee of Revision requests criticism and suggestion, which should be addressed to Dr. C. C. Rice, Chairman, Bellevue Hospital, New York. The work is a decided advance upon all previous publications, and has been brought up to the latest date possible while passing through the press. The Committee cannot be too highly praised for its promptitude and efficiency.

Onychophagy is the name given by a French physician to the morbid habit of nail-biting. He finds it very common among French school-girls—61 out of 207 in one school. Are the deformed finger-ends and nails so commonly seen a result of the custom?

REVIEWS.

THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA. Seventh Decennial Revision (1890). By Authority of the National Convention for Revising the Pharmacopeia, held at Washington, A. D. 1890. Official from January 1, 1894. Published by the Committee of Revision. Philadelphia: J. B. Lippincott Company. Agents: P. Blakiston, Son & Company. 1893.

THE new Pharmacopeia is a thoroughly good book. The Committee of Revision and the printers have both done well their respective shares of the work of prepara-

tion and issuance of the new standard, and they, as well as the profession, are to be congratulated alike on the accuracy and the neat appearance of the official volume. The preface gives clearly and succinctly an account of the principles guiding the Committee in its work, and indicates what changes have been made in the text. Lists of changes of titles and of articles added and dropped, and the various tables of chemic data, add to the usefulness of the work. The determination not to admit articles that can only be made by a patented process, or names in which a proprietary right is claimed, shows that in any truly representative medical or pharmaceutic body right principles still prevail. The metric system has been adopted in the text, solids being prescribed by weight, and liquids, except in certain instances, by measure. The substitution of the ordinary chemic nomenclature for the cumbrous and obsolete system of former Pharmacopeias, *e.g.*, "sodium phosphate," instead of "phosphate of sodium," is to be commended. The Committee has done wisely, however, in retaining the respective adjectives in the Latin and English titles of mild mercurous chlorid and corrosive mercuric chlorid, yellow mercurous iodid and red mercuric iodid, etc. The change from *green* to *yellow* in designating the protiodid is an improvement without danger. We regret that the Committee did not decide to adopt the new spelling of chemic names advised by the American Association for the Advancement of Science. Some orthographic changes have, however, been made. Arsenium becomes arsenum; aluminium becomes aluminum, and their derivatives are correspondingly altered in Latin and English. Creasotum is changed to creosotum. The terminal "e" is retained in the spelling of oxids, chlorids, chlorin, iodin, etc., and in the names of alkaloids, to distinguish them from the so-called neutral principles. This is a disappointment to us.

In addition, erythroxylon becomes coca, brayera becomes cusso in Latin and kousso in English, thus making the ordinary and official names the same. Other changes of official titles indicate change or greater strictness in the preparation. Thus, æther fortior becomes æther, and chloroformum purificatum becomes chloroformum, the dropping of the adjective indicating that the commercial preparation is no longer recognized in either instance. Aloë becomes aloë socotrina, and aloë barbadensis is added. Extractum belladonnæ foliorum alcoholicum and extractum belladonnæ radicis fluidum replace the shorter titles of 1880. Gossypium becomes gossypium purificatum. Viburnum becomes viburnum prunifolium, and viburnum opulus is added. The entire class of abstracts is dropped; wisely, we think. Of the mixtures not dropped, that of ammonium and iron acetate becomes a solution (Latin, *Liquor*), and those of ammoniacum, almond, asafetida, and chloroform become emulsions (Latin, *Emulsa* [*um*]). While adding this class (emulsions), an official emulsion of cod-liver oil would have been in place. Aqua hydrogenii dioxidi becomes official as a 3 per cent. (about ten-volume) solution, slightly acid. The penultimate *i* should have been dropped, as in arsenum and aluminum.

Among other important additions are acetanilidum, aloinum, aspidosperma, cocainæ hydrochloras, convallaria, strophanthus, salol, naphthol, hyoscinæ hydrobromas, eucalyptol, pepsinum (digestive strength 1 : 3000), pancreatinum, petrolatum liquidum, rhamnus purshiana, sodii nitris, spiritus glonoini, sparteinæ sulphas, and the salts of strontium. In all, eighty-eight new articles have been introduced, and ninety of those previously official have been dismissed. The word official, too, is recognized in place of officinal, a reform long contended for by Bartholow.

We regret not to see ethyl iodid, bromoform, trichloracetic acid, ozonic ether, quinin and urea hydrochlorate, guaiacol and its salts, naphthol benzoate, quinin salicylate, cinchonidin salicylate, and bismuth salicylate among the additions. An official preparation of peptones, an official preparation of carica papaya, an official albuminate of iron, an official preparation containing iron and a salicylate, an official syrup of hypophosphites containing strychnin, are desiderata not yet supplied.

In conclusion, we must again express to Dr. Rice and his associates our high appreciation of the thoroughness and scientific accuracy of their work—a work of which, while all of us reap the benefit, but few realize the labor.

A Manual of Diseases of the Ear. By George P. Field, M.R.C.S., Aural Surgeon and Lecturer on Aural Surgery, St. Mary's Hospital Medical School, London. 8vo, pp. 391. Philadelphia: Lea Brothers & Co., 1893.

The most apparent merit in this volume is the excellent colored plates illustrating the normal and pathologic appearances of the aural fundus. All are shown as viewed through the speculum, with the latter in its proper position, and are about the best that have yet appeared in any book on the ear, and almost the first seen by the reviewer which are of real value to students.

The anatomy, physiology, and physical examination of the organ of hearing are ably discussed in the earlier chapters of the work, the remaining sixteen sections being devoted to the diseases of the ear.

Osseous tumors of the meatus are very fully discussed, and the best methods of operation ably described—the chapter being one of the best on this subject; a large number of cases are reported in detail.

The weakest part of the book is that devoted to catarrhal and suppurative inflammation of the middle ear, the treatment advised being, for the most part, very old-fashioned, crude, and not well suited to American patients, however it may act on an English clientèle.

Aural polypi are well described, and especially well illustrated, and the treatment recommended is well up to date.

The therapeutics of tinnitus aurium is treated of in less than two pages, and it is not equal in value to the major part of the volume.

Taken as a whole, the book well deserves a prominent place in the library of every aurist, and will be found particularly valuable by the young student in aural pathology and diagnosis. As is the case with so many works written by European specialists, the treatment advised must, however, be largely modified by American methods in order to secure the best results in our climate.

STRICTURE OF THE URETHRA. By G. FRANK LYDSTON, M.D., Professor of the Surgical Diseases of the Genito-urinary Organs and Syphilology in the Chicago College of Physicians and Surgeons, etc. Chicago: The W. T. Keener Co., 1893.

THIS volume is based on a course of class-room lectures delivered by the author, the aim having been to produce a practical work rather than one complete in the history of the many phases through which urethral surgery has advanced to its present position. It is designed for the general practitioner and student rather than for the andrologist.

The first chapter is devoted to a study of the anatomy of the urethra, which is essential to a clear understanding of the pathologic conditions that affect this structure. The author dwells with commendable emphasis on the the necessity for asepsis in urethral work. There is no doubt but that in the past lives have been lost by indifference in this particular, but this should not occur now that the value of "surgical" cleanliness is so fully established. The subjects of spasmodic, inflammatory, and congestive stricture have been simplified by considering them usually as complications of organic stricture. These the author calls *plus conditions;* they must be removed by appropriate measures before the treatment of the true stricture can be satisfactorily continued. We think that Dr. Lydston gives a very fair estimate of the value of electrolysis in the treatment of urethral stricture. He has demonstrated his thorough familiarity with the subject upon which he writes. The treatment recommended in the different varieties of stricture is in accord with that taught by the foremost of our conservative specialists, and may be followed with the confidence that it is the best at our command in the present state of knowledge. The book cannot fail to be of value to those engaged in this line of work. A few typographic errors and a mistake in numbering some of the cuts have escaped the proof-reader, but these do not detract from the merit of the text.

CORRESPONDENCE.

IMPROVED PLASTER-OF-PARIS JACKET.

To the Editor of THE MEDICAL NEWS,

SIR: In THE NEWS of January 21, 1893, p. 70, there appears an article under the caption of "Plaster-of-Paris in Orthopedics," by Dr. A. J. Steele. In speaking of the use of plaster in the treatment of Pott's disease, Dr. Steele employs the following language:

"Usually the plaster jacket is made to extend above not higher than the axillæ; but if the disease is in the cervical or upper dorsal region, more thorough support can be obtained by carrying the bandage above the shoulders, like a vest. *I cannot say whether or not I was the first to adopt this plan, now some twelve years since* [italics mine], but certainly support for three or four additional vertebræ can thus be had; and with the disease in the cervical region the bandage has been carried still higher, up the back of the neck and around the head. To additionally strengthen the jacket I fortify it with strips of galvanized-wire gauze, the size and strength of the strips depending upon the age of the patient; the corners are cut off and the edges bound with sticking-plaster. The plaster is better incorporated with the gauze than with perforated tin."

It is with the intention of relieving Dr. Steele from the doubt as to whether he or someone else was "the first to adopt this plan," as well as for the benefit of those of your readers who are interested in this subject, that I make this communication.

I quote from a paper of mine published in the *St. Louis Courier of Medicine*, December, 1880, under the title "Improved Plaster-of-Paris Jacket, or 'Cuirasse' for Posterior Spinal Curvature in the Middle and Upper Dorsal Regions":

"In 1876, while attending Mrs. W., she asked me whether I could not do something for her son (six years old) who was the subject of posterior spinal curvature (2d to 6th vertebra) and who had been for some time under the care of various physicians and surgeons without receiving much, if any, benefit." As this was out of my line of practice (gynecology) I recommended Dr. Louis Bauer, the well-known orthopedist, who, after exhausting every known means for eighteen months stated to me on May 3, 1878, that unless some new means was devised the treatment would prove to be a failure. This, to my great disappointment, I had observed long before, and explained to Dr. Bauer the principle of the cuirasse that I had mentally devised for this patient while observing the failures and imperfections of the apparatus tried, including Sayre's. The plan was adopted and the apparatus applied with success.

"The 'cuirasse,' or vest, as Dr. A. J. Steele calls it, may be made, like Sayre's jacket, of other material, or of plaster-of-Paris rollers and strips of tin or veneering. The patient being suspended and provided with a thin, tightly-fitting undershirt, as directed by Dr. Louis A. Sayre, rolls of cotton or folded cloth are stitched to the undershirt on either side of the curvature. The bandage is applied first by a few circular turns around the chest, sufficiently tight to prevent the respiratory motion of the ribs, then obliquely across the shoulders so as to immobilize the clavicles and scapulæ. This is continued by means of an occasional reverse of the roller until the entire chest is covered, reaching down behind to the twelfth dorsal vertebra, from thence along the lower border of the ribs and costal cartilages to the inferior extremity of the sternum, and above from the vertebra prominens, along both sides of the neck to the upper border of the sternum in front, thus covering the thorax completely as by a shell. This bandage, when tightly applied and allowed to harden before the suspension is interrupted, will keep up every advantage gained by the suspension, since on account of its tight application it sustains the chest rigidly in the shape thus given to it. Respiration is henceforth altogether abdominal. The diseased vertebræ are free from pressure, and undisturbed by the motions of the loins and head, and by the fixation of the shoulder-blades and clavicles, of those of the upper extremities. They are also pressed as nearly as possible in a line with their healthy neighbors without pressure on the prominent spines, because of the lateral pads; their healthy parts sustain the weight, while the diseased bodies of the vertebræ are left free and unencumbered. Thus the 'cuirasse' is to

the chest as solid and complete a splint as ever was applied to any single fractured bone.

"The necessary exercise for the maintenance of the general health is greatly favored by it on account of the perfect freedom of all the customary motions. When the patient is dressed it is so nearly invisible that none but those initiated will notice its presence. . . . .

"A new bandage was applied July 12, 1878, but in consequence of the inferior quality of plaster accidentally used, the apparatus soon crumbled, and accordingly a new one was substituted on August 2d. Dr. Bauer being out of the city at the time, Dr. A. J. Steele was called in for that purpose, and the apparatus now for the third time successfully applied. As the child was to be removed for the hot season to the North, his parents desired that the splint should be fixed so that they could easily remove it, should necessity require it. To meet their wish, I cut it open over one (the left) shoulder and down on the same side, breaking the plaster with a dull knife and hammer by gentle blows on the opposite shoulder and side, so as to make the remaining cloth act as a hinge, then separating the cut edges made the boy, his right arm extended horizontally, step out of the shell to the left. Along the cut edge, over the side and shoulder I had buckles and straps attached."

As this device has certainly done much good in an otherwise almost incurable class of cases, I may be excused for objecting that others should claim its invention.

Respectfully,

Eug. C. Gehrung.

St. Louis, Mo.

PLASTER JACKETS.

To the Editor of The Medical News,

Sir: In reply to the communication of Dr. Eugene C. Gehrung, the advance sheets of which you have kindly submitted to me, I would say that I gladly accord to the doctor his claim of originality and priority in the splint which he calls the "cuirasse."

When I made the remark which in the quotation is italicized, I did not have in mind the "cuirasse," which finds its limit below with the line of the ribs and sternum, but to the long jacket, which extends downward as far as the flexure of the thighs, and which does include the abdomen—an entirely different appliance from the former—one covering the chest only, and the other the whole body. It was this long splint also I had reference to in my article read before the Missouri State Medical Association, May 22, 1878, and published in its *Transactions*, p. 18, from which I quote: "With the disease in the upper dorsal region, additional support may be gained by passing the bandage (plaster) obliquely over the shoulder"—which statement, as far as I know, is the earliest published reference to the matter.

In my paper on the "Uses of Plaster" I did not make mention of the gypsum "cuirasse," but I would gladly do so now if not too intrusive. For several years I faithfully tried the short "cuirasse" in upper dorsal disease, but being greatly disappointed in the results, I discontinued its use and have not employed it for many years.

I especially remember one case of Pott's disease in the upper dorsal region, in which I firmly applied the bandage to the chest, and obtained such support that the little fellow continued active in his sports. However, after a few months had passed, symptoms of spondylitis in the dorso-lumbar region developed, a boss appeared, and later paralysis. I always believed that if the first support had included the whole spine the lower projection would never have appeared.

If one wishes to thoroughly immobilize a diseased joint, it were best to fix the contiguous joints as well; so in inflammation of the vertebræ, the fixation should include as much of the spinal column as possible, at least the parts adjacent to the disease. In my case referred to, the thoracic vertebræ were made firm, while the lumbar were unduly movable; so that traumatism readily occurred at the junction of the two in the dorso-lumbar region, just as the bent fishing-rod breaks at the ferrule, or the axe or hammer handle breaks where the wood enters the steel.

So, in Pott's disease I am not using the short "cuirasse," and I use the long plaster jacket only occasionally. Both of these splints are intended as portable appliances. I have come to believe that we get better results and less deformity in the treatment of this disease by recumbency, combined with immobilization, and possibly traction, than in allowing the patient to be up and about with the superincumbent weight pressing upon the diseased bones.

Respectfully,

A. J. Steele.

St. Louis, Mo.

COMMON-SENSE SURGERY VS. "ANTISEPTIC SURGERY."

To the Editor of The Medical News,

Sir: There has been so much written on the subject of antiseptic surgery, that it is only with a word of apology that the present communication is added to the list.

Old methods of operating, with dirty instruments and surroundings, were bad. After a time surgeons found out that, generally speaking, dirt and primary union were incompatible, and that dirty hands and instruments meant pus. They reformed, and, as is the rule in reformations, went too far—were not satisfied with simple cleanliness, but must needs have hyper-cleanliness. Lately they have come to see that it is not absolutely necessary to numb one's fingers with carbolic acid or to drench (often poison) one's patient with bichlorid in order to obtain a good and successful result. I am told that latterly such has been the drift of opinion, though, unfortunately, I have been rather out of the track of civilization, and where but little current medical literature was obtainable, and if ground already gone over is trenched upon, let this be my excuse.

The causative reason for this paper is the faint hope that perhaps a word, the result of practical experience, may be of some trifling value. It is not intended to be a scientific dissertation on the subject from a theoretic standpoint.

I left this country to practise in Honduras at a time when the prominent surgeons who were not carried away with the idea of (if the word may be used) hyper-antisepsis were the few and far exceptions, and I, for a time, went with the crowd, conscientiously numbing my fingers and cauterizing my hands in wild efforts to be antiseptic, and to get the patient into a similar much-to-be-longed-for condition. No matter what precautions

were taken, no matter how much washing and scrubbing were done, results were not always satisfactory. I finally concluded that I would discard carbolic acid and mercuric chlorid, and see what results were obtainable under a régime of simple cleanliness of instruments, hands, dressings, and patient, so far as soap and water would go. Instruments before being used were cleansed with 95 per cent. alcohol. In Honduras the field for experiment is practically unlimited and material very plenty. The results were most gratifying, and certainly no worse than formerly, to say the least. A series of as nearly as possible parallel cases was determined upon and carried out, in the course of which one hundred wounds of all sorts, from a simple scalp-wound to an amputation of the thigh or abdominal section, were treated. In fifty water only was used and in fifty all possible "antiseptic" rules were followed, including cleaning and boiling the instruments and soaking them in 5 per cent. carbolic acid solution, cleansing hands and wounds with 1:2000 bichlorid, and, in cases of abdominal section, washing the abdomen with 1:10,000 bichlorid solutions. These comparative results were decisive. In almost every instance the plain, clean-water treatment was followed by the most satisfactory result, and the reason did not seem to be difficult to find in the cases in which the wounds were closed and union between two raw surfaces was desired.

To my mind it is clear that an "antiseptic solution" of sufficient strength to do any good at all on the lines claimed for it as a germ-destroyer, must be strong enough to quite effectually kill the superficial layers of cells on the surfaces to be approximated, so that when they are brought together for union there is not the simple placing in contact of two raw surfaces, consisting of live cells, as is the case when harmless water is used, but between the living tissues of the flaps is a layer—or, rather two layers—of destroyed cells, which must be absorbed before the healthy tissues on each side can be joined by the new scar-tissue. Germs there will be, but they do no harm, as has been conclusively shown over and over again, unless they are of a virulent septic variety, and then they have been introduced upon the hands or unclean instruments of the operator.

In considering open wounds, when the result desired is a healing by granulation, the condition is just the reverse, and I have found swabbing out with carbolic acid solution (50 per cent.) to be an exceedingly valuable procedure. It is painful, to be sure, but what do we get? All germs are emphatically destroyed, not only on the surface, but for an appreciable depth below, and, in addition, there is left a thick covering of destroyed tissue, under which granulation may commence and get a healthy start before the covering has sloughed away.

In the treatment of uncomplicated gunshot wounds, "flesh wounds"—wounds of the soft parts only and not involving any large artery or vein—this 50 per cent. carbolic solution is extremely useful. The wound is thoroughly cleansed and the surfaces agglutinated. The cauterized tissue does not slough, except near the extremities of the canal, but is absorbed, and healing ensues with less discomfort and less pus than when the strong carbolic is not used. The method I have employed is very simple. An eyelet-probe, long enough to pass through and leave the eyelets projecting, is introduced and threaded with a narrow strip of gauze or unbleached muslin, the ravellings having been carefully removed. This cloth is saturated with the strong carbolic and drawn through the wound. In long gunshot wounds (say, six or eight inches), when tardy healing and much sloughing result, the cause is often found in a relaxed, sluggish condition of the tissues, which, when a proper stimulant is applied in the form of strong carbolic, is overcome.

Respectfully, PHILIP MILLS JONES, M.D.,
BROOKLYN, N. Y. Ex-Surgeon-General, Army of Honduras, C.A.

STENO, STENSEN, STENSON, STENON, OR STENONIS?

To the Editor of THE MEDICAL NEWS,

SIR: The trend of modern medical literature seems to be in the directlon of a multiplication of names for certain processes, operations, etc.—a fact to be deplored, as tending to confuse the student. My attention was called to this subject the other day by a question in anatomic nomenclature. I was taught to call the duct of the parotid gland "Steno's duct," my understanding being that it was so named on account of having been discovered by the Danish anatomist, Nicolas Steno (1638–87). Upon the use of this term the question was asked whether it should be "Steno's" or "Stenon's" duct.

Turning to the latest edition of Gray's *Anatomy* I find that the organ is there named "Stenson's duct," and the American editor adds that it is "more commonly, but less correctly, called "Steno's." In looking up other authorities I find opinion to be divided, although a majority uses "Steno." Billings' *Dictionary* says "Steno" is used in error for "Stenson," while the *Index-Catalogue of the Library of the Surgeon-General's Office* gives "Stenon [or Stenonis] (Nicolaus) or Stensen (Niels) [1636–86]," and a little lower down comes the title "Stenon's duct." Is there any way of telling which is the proper name of the organ?

Respectfully, DANIEL W. NEAD.
PHILADELPHIA.

To our inquiry the learned Librarian of the Surgeon-General's office, Dr. John S. Billings, U. S. A., has kindly replied: "The man's real name was Niels Stensen, but he Latinized this into Nicolaus Stenonis, and in one work into Stenonius. By his contemporaries he is usually referred to as Stenon. I do not think that the lack of uniformity is anything very serious; but if there must be uniformity, the name should be either Stensen, Stenon, or Stenonis. Steno has no good authority for it whatever, and he never signed his name in that way."

[This would seem to settle the disputed spelling, and plainly indicates that STENSEN is the correct form. It were certainly better to have uniformity, and though not alarmingly "serious," the question is of moment at least in cataloguing, indexing, etc.—EDITOR OF THE NEWS.]

M. W. Vignal, D.Sc., a distinguished French scientist, has died. He was one of the collaborators of M. Malassez, and had made valuable studies in histology, fermentation, and tuberculosis.

BEE-VIRUS FOR ACUTE RHEUMATISM.

To the Editor of THE MEDICAL NEWS,

SIR: The following extract appears in the *Bulletin* of the Division of Entomology of the Department of Agriculture (vol. v, No. 5):

"Mr. John Worthington, United States Consul at Malta, has sent us a clipping from the *Malta Standard* of April 11th, which states that the theory that the virus of the bee-sting is an infallible remedy for acute rheumatism has received most unquestionable confirmation from the practices of the country people in Malta. Bees are said to be plentiful on the island, and the virtue of the sting as a cure for rheumatism has been long established. It is, in fact, said to have been a common practice for generations past to resort to this remedy in all severe cases, the results being most favorable."

If the foregoing statement proves to be true, and the same virtue dwells in the virus of the sting of the surprisingly active bee of our country, will not some of our brethren who dwell in the rural districts give it a practical test and supply the cities with the article!

Very truly yours,

JAMES WOOD, M. D.

BROOKLYN, N. Y.

SOCIETY PROCEEDINGS.

FIRST PAN-AMERICAN MEDICAL CONGRESS,

Held at Washington, D. C., September 5, 6, 7, 8.

GENERAL SESSION.

FIRST DAY—SEPTEMBER 5TH.

THE RIGHT REVEREND WM. PARET, D.D., Bishop of Maryland, offered prayer.

The President of the United States, GROVER CLEVELAND, officially opened the Congress. He said:

"The part assigned me on this occasion admits of but few words. It, however, affords me the opportunity to say how pleased I am to be in any way related to an assemblage such as this, called together in furtherance of the highest and noblest purposes and designs. I hope I may also be permitted to add that the protection of the public health and the prevention of contagious diseases are objects properly brought under consideration at the capital of a nation which appreciates fully the serious importance of everything which aids in making intercourse between civilized countries and commerce between them safe and easy. It is also fitting that those who devote themselves to saving human life and the alleviation of human suffering should consider the modes of reaching these beneficent ends at the seat of a government whose greatest regard is the welfare and happiness of the individual citizen. It only remains for me to declare this Congress of the Pan-American Medical Society open for the transaction of the business which has called it together."

HON. JOHN W. ROSS, President of the Board of Commissioners of the District of Columbia, delivered an address of welcome. He said:

"The District of Columbia has entertained many distinguished public gatherings, but it has never known such a one as that which I now have the honor, in the name of the local municipality, to welcome to the national capital.

"For the first time in the history of the new world there are assembled in one of its capitals representatives of one of the oldest and most honored of the learned professions from all of the Americas.

"It is fitting that in the District which derived its name from that of the great discoverer, and that in the year set apart as the one in which the nations may do honor to his memory, the governments whose existence was hastened by the results of his genius and daring should send their representatives to a Pan-American convention.

"It is in keeping also with the spirit of the age which has prompted this gathering of representative men that the delegates so convened should meet not for individual or national aggrandizement, but for the loftier purpose of extending the range of medical knowledge, and for the alleviation of human suffering throughout the world.

"To a profession as progressive as that of medicine and surgery the results of such a conference cannot be over-estimated.

"When we consider the vast area of the surface of the globe here represented, the infinite variety of racial characteristics, of climatic conditions, and of all environments affecting health and disease, we can understand that such interchange of observation and experience was never before made possible.

"What may not be accomplished by all of the forceful men from all the governments here represented, by plans for the establishment and for the enforcement of international quarantine regulations, and for international coöperation against the spread of infectious and contagious disease?

"The municipal authorities in many of the cities of the United States are now endeavoring to locate hospitals for the treatment of contagious diseases near enough to the centers of population to avoid the dangers incident to a long transportation of patients affected with such diseases, and near enough to be within the range of a water-supply and of adequate sewerage facilities.

"It is the common experience of all who are charged with such responsibility that the dread occasioned to those who reside in the vicinity of the proposed locations assumes almost the proportions of a panic.

"If the position maintained by many eminent physicians be correct, that such hospitals if properly conducted are not likely to be the means of communicating disease to those residing near them, the public mind should be relieved of its needless apprehension, and if this great body of experts should deem the matter worthy of its consideration there can be no doubt that an authoritative expression of its views would do more than could be hoped for from any other source to educate the public mind upon this subject."

DR. WILLIAM PEPPER, the President of the Congress, then delivered an informal address upon the purposes of the Congress. The program, he said, exemplified the peculiar constitution of this body. The invitation extended by the United States had been cordially accepted by every country. As a part of the proceedings of each general session representatives of different countries would be called upon. This Congress represented the medical profession of the western hemisphere. This Congress, it

was hoped, was but the first of a series of congresses that would consider questions of such great moment to every country. They called this congress Pan-American, according to recent usage. Why not American? Are they not all Americans? He would be happy to see, as the result of a few such congresses, this Pan-American Congress merged into the American Medical Association, whence it had its origin.

DR. JOHN C. PHILIPPO, President of the Legislative Council of Jamaica, who was present as a delegate, made a brief address.

HON. J. B. MCCREARY, of Kentucky, made some remarks, in the course of which he pledged his aid in securing desirable medical legislation.

DR. F. MONTIZAMBERT, of Quebec, next spoke briefly as the representative of British North America. He urged coöperation on the part of the nations in sanitary works and in guarding against the spread of disease.

DR. JUAN J. ULLOA spoke as the representative of Costa Rica.

DR. J. N. HIBBARD, of Indiana, President-elect of the American Medical Association, made a short address and extended a cordial invitation of attendance at the next meeting of the Association, to be held in San Francisco in June next.

DR. CHARLES A. L. REED, of Cincinnati, the Secretary-General of the Congress, made an informal report upon the work of organization.

DR. S. S. ADAMS, the Chairman of the Local Committee of Arrangements, briefly recounted the work that had been done in preparing for the Congress, and spoke of their indebtedness to Senator Gorman for having secured action from Congress granting an appropriation for the entertainment of the Congress. He then explained in detail the arrangements made for the entertainment of the Congress and the arrangements for the meetings. In concluding, he expressed words of welcome in behalf of the members of the medical profession in Washington.

PROFESSOR FRANCISCO A. RIZQUEZ, of Caracas, Venezuela, delivered an address upon "The Relation of the American Flora to the Practice of Medicine."

SECOND DAY—SEPTEMBER 6TH.

DR. AUGUSTE COMEAU, of Haiti, delivered an address in French; DR. MENDIZABEL, of Orizaba, Mexico, spoke in Spanish.

DR. MANUEL A. MUNEZ, Surgeon-General of the Army of Peru, and DR. PEDRO LAGLEYZE, of the Argentine Republic, both spoke in Spanish.

DR. PLUMMER, of San Francisco, Chairman of the Local Committee on Arrangements for the next meeting of the American Medical Association, pointed out the advantages and attractions of his city and State for the projected gathering.

The formal address of the occasion was then delivered by PROF. RAFAEL LAVISTA, M.D., of the City of Mexico, the leading surgeon of that country, on "The Surgical Treatment of Cases of Gangrene."

PRESIDENT PEPPER announced that he had been requested to present a resolution, for reference to the International Executive Committee, as follows:

"In view of the importance of taking the necessary steps to insure the prosecution of the great continental work of the Congress, the International Executive Committee is hereby empowered and requested to appoint suitable international committees on the subjects of proper Governmental recognition of State preventive medicine, on uniformity in American pharmacology, and on medical education."

The following resolution was referred to the International Executive Committee, to be referred by it to the proper sub-committee for action:

Whereas, in the language of a British journalist, "greater energy and more systematic administration are much needed in regard to the sanitation of India, and England's imperial responsibilities in this matter are very heavy;"

Whereas the question has been asked in Austria, Russia, and France, "You English have, by your sanitary improvements, prevented cholera from gaining a foothold in England, why do you not attack it in its birthplace and prevent it from spreading into life in India?"

Whereas this question has been asked in America: "Why should the whole civilized world be allowed to suffer through the constant dread of invasion or invasion itself of cholera on account of the religious fanaticism of the Mohammedans of the East?" Therefore, be it

Resolved, That we respectfully recommend to her Imperial Majesty's Secretary for India these recommendations:

1. An imperial sanitary department attached to the Government of India.

2. A provincial sanitary department attached to each of the provincial Governments.

3. A local sanitary department.

Resolved, That the Secretary-General of this Congress be directed to furnish a copy of this to her Imperial Majesty's Ambassador at Washington, to be forwarded to Lord Kimberley, her Majesty's Secretary for India.

The following resolution was reported from the Section on Hygiene, indorsed by the Section on Railway Surgery, for the action of the whole Congress:

Resolved, That in the opinion of the Section of Hygiene, Climatology, and Demography of the Pan-American Medical Congress, the interests of the public health in every country should be and must be entrusted to a Department of the Government especially charged with their administration, and that while the precise form of administration may be left to legislation, the indispensable requisites are that it shall be national, that it shall have parity of voice and influence in the national councils, that it shall have independent executive authority under the limitations common to other Departments, and that it shall be intrusted to educated and experienced medical men, who alone are competent to assume its responsibities.

The resolution was referred to the International Executive Committee.

In the afternoon the delegates and their families were formally received by President Cleveland.

In the evening DR. WILLIAM PEPPER, the President of the Congress, delivered an address, in the course of which, among other things, he pointed out that "this Congress represents much more than our common interest in medical science and the common feeling of brotherhood which animates the entire profession. It is—indeed, it always has been, and forever may it so continue—the glory of

the medical profession that their allegiance is one and undivided, for their service is solely in the cause of truth and humanity. Dynasties have risen and crumbled; the map of the world has been changed times almost without number; but the march of medical science through the ages has been ever onward and upward toward those lofty goals—the prevention of disease, the relief of suffering, the improvement of the race.

"The history of European medicine for more than three hundred years is a record of which we may well be proud, when the enormous obstacles to progress are held in view. But it is sad to reflect on what has been done as contrasted with what might have been. The dense ignorance of rulers and masses on scientific questions, the slow progress of sound, useful education among the people, the huge claims of imperialism and of militarism, the wanton waste of luxury, have retarded research, have left but paltry sums available for the diffusion of knowledge, have hindered the embodiment in legislation and in actuality of much that would help the healing of the nations. It is an odd commentary on the vaunted civilization of to-day to contrast the sums doled out by the most enlightened Governments of Europe for the promotion of higher education and original research or for the suppression of preventable diseases, with those lavished on the vast hosts of armed men and the huge fleets of unwieldy armored ships deemed necessary for the maintenance of peace and order.

"Among the results which may be anticipated from this meeting is, I trust, the adoption of some well-considered plan for systematic conjoint study of our American remedies and their pharmaceutical preparations, looking to their scientific classification, to greater uniformity in their preparation, and ultimately to a single pharmacopeia for the entire continent.

"Everyone knows now how superfluous it is to say a word in defence of American literature, and certainly we who know how powerfully the opinions and practice of medical men in Europe and throughout the world are influenced by American writings may view our position with some complacency. Yet a survey of what America is actually contributing to medical literature shows clearly how far we are behind the nations which lead in medical thought.

"The apparently extraordinary number of medical journals in America is due chiefly to a substantial reason, and one which influences equally the existence of very numerous medical schools and medical societies. The vast extent of territory and the relatively sparse population render it impossible to serve the country with as low an average of medical men, schools, societies, or journals as is possible in more densely-populated countries. As to other and less satisfactory reasons which have operated, especially in the United States, to produce a great growth of ill-equipped medical schools and of poorly-supported medical journals it is not necessary to speak here. Indeed, the rapid rise in the standard of scientific requirements, both of medical men and medical literature, and the increasing appreciation on all sides of the fact that the higher medical education is the true interest both of the profession and of the public is accomplishing the much-needed work of checking the ill-considered establishment of new medical enterprises and of stimulating those in existence to more earnest life and more lofty aims.

"So true is this in regard to our medical journals in particular, that no one who has occasion to consult regularly the files of any number of them can fail to have been struck forcibly with the steady and decided improvement in the tone of their management and in the scientific quality of their contents.

"This Congress meets at a period of peculiar and critical interest in medical education, and I am glad to say that for the first time in the medical history of the United States we may feel proud to have such a meeting convened here, and to invite a close examination of our educational standards and facilities. I should fail in courtesy and in candor alike were I not to acknowledge the great value of the example which has been so consistently set by Latin-America and by Canada in the maintenance of a high standard of qualifications for medical practitioners.

"Fifteen years ago the medical profession of the United States arraigned severely the management of their overnumerous medical schools.[1] While Canada then exacted a reasonably strict entrance examination and a course of medical study extending over four years, with one session of six months in each year, and while every country in Latin-America exacted a collegiate degree or a rigid entrance examination, and a course of medical study extending over six years, it was the general custom with the medical schools of the United States to grant a diploma conveying the full right to practise medicine to applicants who had been admitted without preliminary examination, and had attended without term examinations two courses of lectures covering about five months, and had passed a single and final examination conducted by their own teachers, whose emoluments were derived solely from the fees of such students. This discreditable prostitution of a great educational trust had been gradually brought about by large causes upon which I may not now comment. But it is with justifiable pride that we may point to the admirable and sweeping reforms that have since been instituted. It remains true that the laws of many of the States allow charters for medical schools to be secured without any guarantee of the standard of education that shall be maintained. But the awakened sentiment of the profession and of the community has in a rapidly-increasing number of the States insisted that medical graduates before being admitted to practice shall pass a State examination conducted by an impartial board of examiners appointed by the Governor. The medical schools, to their honor be it proclaimed, have, with few exceptions, been foremost in the struggle to secure this wise and beneficent legislation. They have done much more. In advance of these laws which will insure a far higher standard of medical qualifications in the States fortunate enough to be so protected, the faculties of a number of the leading schools have forced their standard up at first to three years of obligatory study, and now to four years of eight months' study each, with a carefully-graded curriculum and with strict examinations before entrance, at the close of each term, and finally before graduation.

[1] Regular schools, 65; Homeopathic, 11; Eclectic, 4; total, 80 in 1877.

"When we recall that this has been done without the slightest governmental aid, and, further, that owing to the prevalent view that medical schools have been sources of large profit to their faculties the streams of private benefaction had not yet been directed in their favor, you will appreciate the high sense of duty and the devotion to science which have led these faculties to assume greatly increased labors with an expectation of considerably diminished remuneration owing to reduced attendance of students and to augmented expenditures.

"The Committee of Arrangements of this Congress has wisely provided for a tour of inspection of some of these institutions. It is trusted that all of our foreign delegates, and as many as possible of the members of this Congress, will avail themselves of this opportunity to examine the equipment of some of our leading medical schools. They will be gratified to find, in hospitals, in laboratories, and in libraries and museums alike, facilities which bear comparison with those of Europe. They will find an arrangement of studies, and, above all, an organization for the conduct of daily thorough bedside instruction in all branches of medicine, which leave little to be desired. It is easy to foresee, as another of the desirable results of such meetings as this held successively in various parts of America, such increased acquaintance with and confidence in our respective methods of medical education and medical treatment as will retain on our continent many of our students and many of our invalids who have been in the habit of going further to fare no better.

"A broad field opens before us for the study, with the aid of collective investigation, of the distribution and course of phthisis and rheumatism and other important diseases as influenced by race and locality. The endemic fevers, other than malarial and typhoid and yellow fever, which are said to prevail in various parts of North and South America, have long demanded systematic investigation to complete the study which the illustrious Drake began. We shall now have the opportunity of studying, equally by means of collective investigation, the relative effects of various climates on the numerous races now represented in America, and of determining more accurately the scientific and practical questions connected with our extensive series of health resorts, which embrace the finest examples of every type.

"Everyone now knows, or ought to know, that the most dreadful diseases are inseparably connected with definite organisms, that these organisms have special laws of development and distribution, that to destroy or exclude them is to avoid the disease, and that to tolerate conditions which favor their development is to encourage and invite the attack of the disease. When these simple, demonstrable propositions are considered in connection with such scourges as cholera and yellow fever, and typhus and typhoid fever, and scarlatina and diphtheria, and epidemic meningitis, it needs no further argument to prove the value and the necessity of quarantine, and of efficient medical inspection and protection. Nor does it need further argument to show the wisdom of establishing laboratories of hygiene at many points over the country, of equipping them amply with the ablest men and the finest apparatus, and of endowing them liberally, so that the search after the yet unknown causes of disease, and after the best methods to prevent the development of such causes as are known, may be prosecuted with ceaseless vigor.

"There should be, and the day cannot be far distant when there shall be, in the cabinet of every Government here represented a secretary of public health, of rank, influence, and prerogative equal to that of any other cabinet officer.

"Here, then, is the last and greatest service to be rendered to science and to the nation by our Congress. Our combined influence will be irresistible when used in advocacy of higher education; in carrying out large plans for the scientific study of our national life, as affected by social and climatic influences; in the adoption of remedies and remedial measures of demonstrated merit, and in the insistence upon a fuller recognition of the lofty function of preventive medicine. 'Salus sanitasque Reipublicæ, suprema lex.' Let us acquire here a closer touch with each other, a deeper faith in our profession and its noble destiny, and a stronger determination to labor in brotherly coöperation for the loftiest ideals of service to science and the race."

(To be continued.)

NEWS ITEMS.

An Army Medical Board will be in session at Washington City, D. C., during October, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-two and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing Dr. George M. Sternberg, Surgeon-General U. S. Army, Washington, D. C.

The Journal of Surgery, Gynecology, and Obstetrics is a new publication emanating from Atlanta, Ga. Dr. C. Evans Johnson is the editor, and he is supported by a strong list of collaborators. The first number bears the date of July, and contains a number of original articles, some well illustrated, besides reports of the proceedings of societies and departments for abstracts in surgery, genito-urinary and venereal diseases, gynecology, and obstetrics.

Cholera.—The progress of cholera continues, with but little abatement. During the week new cases have been reported from Holland, Austria, Hungary, Germany, Italy, Russia, and Belgium. The disease has also appeared in England at Grimsby, a Lincolnshire seaport, and at Hull. Numerous deaths have occurred. A fatal case has occurred in this country, in Jersey City, but no others have come under observation.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

HAIG'S URIC ACID THEORY.[1]

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IT may be taken as an axiom in medical philosophy that no therapeutic formulary is satisfactory, complete, or scientific which is not supported by a knowledge of the physiology and pathology of the processes that it is designed to modify, as well as of the bio-chemic effects of the remedial agents employed. In medicine, however, as in other inductive sciences, generalizations are made from the association of individual facts; and as here the number of accurately observed facts is wholly inadequate to the purpose, it is not surprising that in daily practice we apply, as inductions from ill-founded generalizations, therapeutic agencies that act in a manner we hardly know how on pathologic conditions we do not understand in the least.

The "practical man," falsely so called, is satisfied with getting results; the scientific physician rests not until the results are explained. The diagnosis and rational treatment of "organic" disease is a comparatively simple matter, for we have a tolerably fair though rough knowledge of the general functions of single organs and of the action on them of various agencies; but the diagnosis and rational treatment of "functional" diseases is a very different matter, for these imply an estimation of the normal, physical, and chemic changes in every living part of the body; they imply a consideration of the mutual relations of the living mechanisms, and also of those lines of misdirection that the working machine may take, turning what we call physiologic processes into what we indefinitely call pathologic ones. Indeed, the very term "functional" disease in pathology, like the expression "catalytic action" in chemistry, is perhaps itself merely the insignia of our ignorance.

It may be doubted if there is any manifestation of energy in the body that is not the outcome of organic change. For instance, Hodge[2] has found that electric stimulation of the nerves entering the posterior spinal roots in kittens produces in the root-ganglia marked morphologic changes, easily recognized under the microscope, which disappear when the animal is allowed to rest a sufficient time after stimulation. Hodge has also discovered the interesting fact that in sparrows similar ganglionic alterations are found as a result of the ordinary fatigue of a day's activity. The evident conclusion is that even so evanescent and feeble a manifestation of energy as a nerve-impulse produces in the nerve-center an organic change that is none the less important because unrecognizable.

It is a significant observation of Musser's[1] that while in text-books of medicine small space is given to the consideration of functional as compared with organic diseases, in actual practice the former class of disorders, taken in a large sense, includes about four-fifths of the cases that come under care. It will be admitted on all hands that the truth in medicine will endure; that the false and unessential must gradually be sifted from it. We can only know as truth that which has been logically proved. When a writer treats in the same paragraph and in the same way facts that are proved and beliefs whose probability seems to him of such weight that he accepts them as proved facts, he not only displays a lack of scientific training and unfitness as a teacher, but he also throws actual obscurity on the subject that he attempts to illumine. Moreover, the assumption that the results of medical treatment prove the truth of the hypothesis under which the treatment was instituted is an error that is often as serious in its effects as it is common in practice. Clinical observation and therapeutic facts must go hand-in-hand; but in our present ignorance of physiology and pathology the results of treatment predicate no explanation of bodily changes.

There is a subject of the medicine of to-day that by its importance in pathology, by the frequency of the disorder and its far-reaching effects, has won deserved attention. It is the subject of lithemia, uric-acidemia, or what not, all names for it implying a morbid condition of which uric acid is the constant factor, if not the cause. The symptomatology of lithemia is about as complex for a physiologic disorder as is that of hysteria in mental disease. The pathology of the disease is the outcome of processes

[1] A paper read before the Arapahoe County Medical Society, June 13, 1893.

[2] Amer. Journal of Psychology, 1891, and Journal of Morphology, 1892.

[1] Address, Forty-second Session Medical Society of Pennsylvania.

of which we know almost nothing. The analogy of such chemic knowledge of physiologic reactions as we possess would indicate that the physiologic chemistry of lithemia is of appalling complexity.

There is no field in medicine in which it is more difficult to separate facts from beliefs than here. The unbiased investigator knows that in treading such an unknown wilderness as the living body any theory not supported on all sides by proved facts is practically certain to be erroneous.

It therefore seems not only excusable but desirable for us now and then, like a man lost in the woods, to stop and consider whether we are working on true lines—to number and weigh the facts supporting our theory—no matter how satisfactory this may appear to be.

It is hard to estimate the debt that medicine owes to Alexander Haig, if only for the energy and perseverance that have made him the latest prophet of lithemia. Already his work has had considerable influence among physicians, and everyone who reads his fascinating pages must feel a strong inclination to accept his sweeping generalizations, which ascribe to uric acid human disorders of every complexion—from gout to diabetes, and from the simple feeling of discontent to a suicidal melancholia.

The book published by Haig was the outcome of nine years' research, chiefly on the cause and treatment of headache, from which he was a periodic sufferer. In general, he found that on a meat-diet his headaches were intensified, while on non-nitrogenous food they diminished or disappeared. Further study led him to the conception of the close relationship of migraine to gout, and he conceived the idea that uric acid was the cause of the former, as of the latter. He accordingly began to estimate the uric acid eliminated from his own person, and found a constant difference between the proportion excreted during the period of headache and that passed before and after the attack. By easy reasoning he connected the concomitant symptoms of the headache, the slow pulse of high tension, the mental depression, the disinclination for exertion of mind or body, the cold surface and extremities, with the character of the urine and the amount of uric acid contained in it. He says, p. (3): "I soon found that in altering the uric acid I could alter the symptoms related to it; that when I produced an increased excretion with an alkali I produced the headache, mental depression, cold surface, slow pulse, and scanty urine, and that when I stopped the plus excretion with an acid I removed all these symptoms. . . . Then, I also noticed that in curing a headache by giving an acid to diminish the excretion of uric acid, I always produced a certain amount of pricking and shooting pain in my joints (generally in those which had been most used on the day in question), and it naturally occurred to me that the uric acid was held back in those joints and produced the pains. . . . Since then I have found not only that an attack of gout can be produced by giving acid, but what I had observed was only a single instance of a general law, and that all substances which increase the solubility of uric acid increase its excretion in the urine, and do good in those joint-troubles which are due to its irritating presence; while, conversely, all substances which diminish the solubility of uric acid diminish its excretion in the urine, and also increase those irritations in the joints and other fibrous structures which are due to its presence. On such comparatively simple facts and observations the whole of my writings have been based, and as side issues I have been led to reason on the pathology of epilepsy, in some cases of which I have found exactly similar fluctuations in the excretion of uric acid to those met with in migraine, thus explaining a clinical relationship between these two diseases which had long been known and written about; also on the pathology of rheumatism and rheumatoid disease, the causation of Bright's disease, Raynaud's disease, and paroxysmal hemoglobinuria and anemia."

If Haig's conclusions are correct, we have seen the practice of medicine placed at one bound, in some of its most important relations, upon a mathematic basis, and Haig deserves to be mentioned with Hippocrates and Harvey. I do not pretend to dispute the clinical statements made by Haig, or even assail the accuracy of his methods. Whether the exhibition of a certain remedy has caused such or such modification of certain symptoms is a matter in which we can only accept the assurance of the observer. It is notorious, however, that widened therapeutic experience almost invariably cripples the quickly-gained reputation of new remedies, or of old ones applied in a new way.

In a preceding paragraph it has been asserted that any theory concerning physiologic processes which is not supported throughout by established fact is almost certain to be wrong. In examining Haig's work we are appalled at the intrepidity with which conclusions are drawn from premises established in his own consciousness. We are astonished that in a nominally scientific publication the statements of other authors that are in favor of his theories are accounted reliable facts, while many views that have a contrary tendency are not mentioned at all. The work is of a kind in which medicine might well be richer as an essay on the suggestiveness of certain fundamental data, while, at the same time, it is an example of a kind of medical literature of which there is far too much; in which a few plain facts are

so interwoven with ingenious hypotheses that the unwary reader is scarcely able to winnow one from the other.

Haig's reasoning is chiefly based upon an unwarranted assumption, which he by no means succeeds in proving, namely, that the ratio of formation of urea to that of uric acid in the body is constant. The untold complexity of the chemistry of the tissues and of the floating pabulum of the body has for him no difficulty, because he ignores it. The ratio of formation of urea to that of uric acid he estimates as thirty-three to one, though it may be said in passing that Salkowski and Leube put the ratio at fifty or sixty to one, and Landois at forty-five to one. This constant proportion in production being assumed, any variation from it in the urea and uric acid excreted must mean that that substance which is deficient in the urine is retained somewhere in the body.

Again, it is assumed that the urea is never retained in excess in the body, but that its excretion takes place *pari passu* with its formation. Therefore, according to Haig, as the ratio of excretion of uric acid to that of urea is demonstrably variable, the amount of uric acid within the body varies, and is at any time either above or below a certain mean quantity. This excess of uric acid may exist either in the blood or in the tissues. In the tissues the uric acid may either lie latent, not producing symptoms, as in the spleen; or, in certain situations, it may give rise to well-marked disturbances, as in the gout of joints. It is to the uric acid dissolved in the circulating blood that Haig ascribes most of the evils in his category. The proportion of uric acid in the tissues and in the blood is assumed, without proof, to depend on the relative alkalinity or acidity of the media, the precipitation of uric acid occurring in situations where the reaction is least alkaline, and where, it is assumed, it can be least readily held in solution.

Attention may here be called to the careful work of Sir William Roberts,[1] who concludes on experimental grounds that the uric acid of the circulation exists in the peculiar form of a quadriurate, having quite distinctive reactions and solubilities. He also adduces strong reasons for believing that it is the presence of an excess of salines, and not of an excess of acids, that determines the precipitation of urates, and for this reason the favorite location of tophi is in the joints. Again, though it is generally admitted by physiologists that the kidney-substance is peculiar in having an acid reaction, Landois[2] says that "the heart, liver, and kidney are rarely affected by deposits of uric acid." Absolutely no proof is offered by Haig of his therapeutic assumption that the exhibition of acids clears the blood of uric acid by causing its deposition in the tissues, while the exhibition of alkalies causes the resolution of this precipitate and loads the blood with uric acid. Haig assumes, after only a cursory and altogether insufficient attempt at proof, that excess of uric acid in the blood determines an increased arterial blood-pressure by causing contraction of the peripheral bloodvessels. All the evidence of value that we have on this subject goes to show that vascular tension, so far as it depends on the chemistry of the blood, varies with the alkalinity of the fluid only. Any statement that it depends on the uric-acid contents is purely gratuitous.

Haig pays but little attention to the results of Roy and Sherrington,[1] who found that in the dog injection of alkalies into the circulation was immediately followed by a diminution in the volume of the brain—that is, produced vascular contraction—while the injection of an acid caused an increase of volume—vascular dilatation. In view of the fact that in the dog's economy very little uric acid is produced, and that, moreover, the effects are stated by Roy and Sherrington to immediately follow the injection, it certainly seems probable that the change in brain-volume is due to a direct action of the acid or alkali, and not to the diffusion of a hypothetic uric acid to or from the tissues.

Haig makes no reference to the well-nigh classic work of Gaskell,[2] who showed that the isolated frog's heart fed by a nutrient fluid containing one part in 20,000 of alkali has its tonicity increased, and may gradually come to rest in the phase of systole; the opposite effect and rest in diastole being produced by transfusion with minute doses of lactic acid.

It is easy to see the meaning and to grant the truth of the observation made by Sir Wm. Roberts,[3] that the "arthritic incidents of gout may be said, not improperly, to be simply incidents pertaining to the precipitation of these crystals (sodium biurate) in the structures of the joints."

The *tissues* are the seat of bodily life, and their elements form the origin and destination of nerve-supply; and Haig runs counter to well-founded physiologic doctrine when he declares that in general uric acid is inert when deposited in the tissues, but provokes its manifold symptoms only when present in the circulating blood. In the light of modern physiology, the only conceivable way in which uric acid retained within the blood could give rise to symptoms, that is, effect the tissues, is indirectly by influencing the caliber of the blood-vessels and so modifying arterial pressure; but Haig takes the trouble to point out that alteration

[1] Brit. Med. Journ, 1892.
[2] Landois and Stirling's Text-book of Physiology, 1886, p. 470.

[1] Journal of Physiology, vol. xi, p. 85.
[2] Journal of Physiology.
[3] Loc. cit.

of blood-pressure, *per se*, does not cause the symptoms in question, but that the presence of an excess of uric acid is a necessary feature (p. 117).

Haig lays great stress on the clinical observation, valuable in itself, that the amout of urinary water excreted varies inversely as the amount of uric acid contained in it. He considers this fact as the natural effect of an excess of uric acid in the blood, causing general constriction of the arterioles and consequent diminution of blood flow to the kidney. In support of this statement he inappropriately cites some experiments of Lauder Brunton, who caused in animals an increase of vascular tension and diminution in the flow of urine as the result of the injection into the circulation of certain drugs. It is well to mention that Roy,[1] when, by an ingenious apparatus, he directly measured the changes of volume in the living kidney, found that the curve representing the kidney-volume ran parallel with the curve of general arterial pressure—in other words, that the blood-supply of the kidney varied directly with arterial blood-pressure. He found, also, that expansion of the kidney was accompanied by an increased, and contraction by a decreased, flow of urine. Landois, quoting Heidenhain, states the remarkable fact that great changes in the caliber of the renal artery, experimentally produced, failed to alter greatly the amount of blood flowing to the kidney; he concludes in consequence, that the blood-supply of the kidney is proportional to the arterial pressure. Indeed, Haig himself finds it convenient to ascribe the excess of urinary water in certain forms of nephritis to high arterial tension. Haig makes use of the fact that in fevers the blood is less alkaline in reaction than in health, and assumes the uric acid produced during fever to be thrown down in the tissues, being afterward re-dissolved, causing the uric-acidemia of convalescence. He does not refer to the statement of Salkowski and Leube[2] that, in general, in fevers the excretion of uric acid is increased (pp. 102, 336, 461).

Haig makes the statement that bodily exertion and activity of the skin diminish the alkalinity of the blood and cause precipitation of its uric acid in the tissues. We would naturally expect as a consequence that among working-men—who, moreover, at least in America, eat a large proportion of meat in their diet—gout would be a frequent disease; this is notoriously not the case.

It would be interesting to weigh the evidence for Haig's confident assertion (p. 12) that uric acid is formed in the kidney. Much force is attributed by Haig to the announcement of Roberts that in the hours of the forenoon the blood is more intensely alkaline than at other periods of the day. Haig draws the conclusion that, during this "alkaline tide," the blood is surcharged with uric acid that had been stored up in the tissues. If this belief were correct, we would expect to find the morning hours to be normally marked by those subjective feelings of depression and ill-being that Haig so well describes; but against this view we have the universal verdict of healthy mankind.

The criticism that applies to Haig's work, the unscientific confusion of facts and beliefs, is abundantly characteristic of most other writing on this subject. Haig is simply the most notable example of the false method. One cannot but wish that the spirit of Darwin were more common in medical writings. His patient search for evidence against his assumptions, his careful separation of fact from belief, would alone make his work an admirable addition to the medical school curriculum.

In the pathology of the uric-acid diathesis, Haig's main mistake has been in assuming that the ratio of production of urea and that of uric acid remain constant under all conditions. We know next to nothing of the physiologic chemic changes leading to the production of urea and uric acid in the body; we only feel sure in an obscure way that oxygen plays an important part in them. We know that the absorption of oxygen is a variable matter; and there is reason to think that oxygen, after entering the body, can be diverted from one use to another, according to the kind of food ingested, and possibly, also, under drug-action. That uric acid is a less oxidized compound than urea we know, because uric acid by oxidation may give rise to urea; but the most respectable physiologic opinion points to the conclusion that in the body urea is not the normal descendant of uric acid, but that the two bodies are the resultants of different chains of events. In fact, it has been plausibly suggested that the formation of uric acid in our bodies is a remnant of ancestral processes that were once extremely important, but now chiefly of historic and pathologic interest; as, for example, the vermiform cecal appendix appears to be in an anatomic sense.

It is the teaching of physiology that the nitrogenous excreta have two different sources of formation in the body. One is the so-called circulating proteid, which is variable in amount and feeds, but forms no part of, the living tissues, and the other is the living tissues themselves. It seems highly probable that the pathology of the circulating proteid represents a different set of conditions than that of the tissue proteid. We know that proteid in the food is chemically changed in the alimentary canal, giving rise to a long series of compounds of different character; and these, again, are produced in variable ratios, depending on the nature of the

[1] Journal of Physiology.
[2] Die Lehre von Harn.

food and the activity of the digestive organs. Of the complexity of these digestive changes anyone will be convinced who will read the work of Kühne and Chittenden on the chemistry of digestion. As to the further history of these products after their absorption into the body, we can only speculate.

It may be accepted as a physiologic fact that every kind of food-matter—proteid, carbo-hydrate, or fat—besides having its own intrinsic food-value by reason of the chemic potential energy locked up in it, also exerts on the organism a sort of drug-action by which it modifies the vital processes of protoplasm. This statement is a deduction from a long array of physiologic observations that it would be tedious to survey, but it is manifestly an important consideration in practical dietetics.

We can imagine two ways in which diseases not due to the introduction of morbid agents into the body may have their origin, both due to certain physiologic errors of working: 1st. Errors of formation, by which is meant that the chemic changes of the healthy body either do not occur with normal intensity, or that they proceed along lines of disintegration somewhat different from those that are usual, and result in the formation of chemicals that are poisonous to protoplasm; it seems highly probable that oxygen plays the most important rôle in this altered metabolism. 2d. There are errors of elimination in which, owing to sluggishness of blood and lymph circulation, retardation of the diffusion-currents through the tissue-elements, waste products, poisonous when in excess, are heaped up in, and interfere with the function of, living matter.

It has been generally held that uric acid is the responsible factor in producing the disturbances represented under the title of lithemia. Attention has already been called to the conservative observation of Roberts, according to which the influence of uric acid in gouty joints has simply mechanical significance. However convenient a clinical sign excess or deficiency of uric acid in the urine may be, it is at present utterly fallacious to accept uric acid as the cause of physiologic disturbance. We estimate the vitiation of respired air by the percentage of carbon dioxid contained in it; yet it is well known that air which has been breathed does not acquire its peculiarly noxious qualities from the carbon dioxid in it, but from an as yet unknown, organic constituent occurring in trifling amount. So in the uric-acid question, it is quite possible that the dangerous products are the results of changes of which the formation or accumulation of uric acid in the body is only a concomitant and not an essential factor.

My endeavor has been not to obscure this question, but only to make plain, if possible, some of the difficulties to be overcome and the futility of leaning too heavily on theories supported by data of which we know next to nothing. This is an almost untrodden field for physiologic and pathologic experiment, and herein must the problem receive its final solution, which can only be reached through the directing thoughts that must arise from long-continued and exact clinical observation.

HYSTERICAL APHONIA.

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This not uncommon manifestation of hysteria is characterized by an inability of the adductor muscles of the larynx to place the vocal bands in position for phonation. Unlike true paralysis of the adductors, however, there is present a functional and not an organic pathologic condition of the nerves controlling the muscles of adduction.

In phonation, the arytenoid cartilages, to which the vocal bands are attached, are approximated and rotated inward and the glottis is reduced to a narrow slit. In paralysis of the adductors, or in the hysteria which similates this form of paralysis, this narrowing of the glottis does not take place, hence the loss of voice.

Hysterical aphonia, like other forms of hysteria, is found chiefly in young women of a neurotic temperament, and cases are very rarely presented in which other manifestations of hysteria are not observed. The voice is lost, but the patient is able to communicate in a whisper. If the larynx be examined with the laryngoscope, it will be observed that, during attempted phonation, the vocal bands approximate, but not sufficiently for vocalization.

As the name implies, there is in this affection simply a loss of voice, characterized by an entire absence of any inflammatory process or of any organic condition as a cause of the aphonia. It should not, on the other hand, be considered a mere counterfeit on the part of the patient, to excite sympathy; this is very rarely the case.

Hysterical aphonia comes on suddenly, and is sometimes paroxysmal in character, as in other forms of hysteria. Sometimes it is occasioned by fright. The diagnosis of this condition is not difficult if the laryngoscope be used and all of the features of the case are carefully examined. Before concluding that we have before us a case of hysterical aphonia, we must carefully exclude other conditions in which aphonia may be present as a symptom. These are bilateral paralysis of the adductor muscles, bilateral paralysis of the recurrent laryngeal nerve, the presence of a foreign body or tumor, or cicatricial adhesions mechanically interfering with the movements of the vocal bands, some forms of acute and chronic laryngitis, and destruction of the vocal bands.

By means of the laryngoscope the presence of a foreign body, a new-growth, or extensive ulceration of the vocal bands, may be ascertained without difficulty, and acute and chronic laryngitis of sufficient intensity to cause aphonia may be recognized by the conformation and color of the bands and of the adjacent parts.

Bilateral paralysis of the adductors is an exceedingly rare affection, the only cases, five in number, having been reported by Mackenzie, and the diagnosis of these cases is not beyond question. Bilateral paralysis of the recurrent laryngeal nerve is also very rare. In both of these affections, if the laryngoscope is used, the vocal bands will be found widely separated, assuming the "cadaveric" position.

Although there is usually more mobility of the vocal bands in hysterical aphonia than in these two affections, still the differentiation between them by means of the laryngoscope alone would not always be easy. In the attempts at vocalization, however, we find a marked difference. In hysterical aphonia the whisper is natural, but in bilateral paralysis of the adductors, and in bilateral paralysis of the recurrent laryngeal nerve, the whisper is labored, with marked phonatory waste, due to the inability of the patient to approximate the vocal bands. Cough is frequently present in hysterical aphonia, but is never found in true paralysis, as this act necessitates the approximation of the bands. In a doubtful case the administration of chloroform will clear the diagnosis, as the first stage of the anesthesia will bring out the voice, unless true paralysis exists.

The prognosis in cases of hysterical aphonia is good, especially in recent cases. In long-standing cases certain atrophic changes may take place in the muscles, as a result of disuse, but even these cases yield to careful treatment.

The treatment should be both constitutional and local. Constitutionally, arsenic, strychnin, iron, valerian, or the bromids, should be used according to the indications of the case. The influence of ovarian or uterine disease should not be overlooked. The local treatment depends upon whether the case is acute or chronic. In recent cases I have had excellent results from using the faradic current applied externally to the neck. The patient, having been assured that the treatment will absolutely restore the voice, is directed to count from one to ten while the current is passed through the neck, the electrodes being applied on each side of the larynx. Each time that the patient counts, which she will do in a whisper, the current is increased in intensity, the patient being urged, at the same time, to use all her efforts to raise her voice. After a few attempts the voice usually "breaks," and a sound above the whisper is heard. If it be deemed advisable, the treatment may be continued on the following day, although in many cases the voice may be restored in one sitting. If more than one sitting is required, the applications should be carefully continued until some improvement is observed over that of the preceding visit. In chronic cases the treatment is essentially the same, except that the improvement is usually much slower. In these cases, in addition to the faradic applications, the galvanic current should also be used, on account of its tonic effects upon the muscles which have been weakened from disuse. The negative electrode should be applied within the larynx, and the positive electrode externally over the larynx.

CASE I.—Mrs. F., a lady of thirty-two years, had become frightened by the fall of her child. She had fainted, and when she recovered consciousness could speak only in a whisper. I sent for my portable faradic battery, and applied the current in the manner described, with the result of a complete and permanent restoration of the voice.

This case is mentioned only as an example of the acute cases. They are quite frequently met with.

CASE II.—Miss Ella J., forty-one years of age, had suffered from aphonia for eighteen years. After having shown other manifestations of hysteria for about one year, she suddenly lost her voice, being able to speak only in a whisper. After having been treated for some months without success, she was told that change of climate was necessary. She remained away for six months without any change in her condition. On her return treatment was again commenced, but discontinued after three months, the patient being still able to speak only in a whisper. She spent six months of each year at various summer resorts. During the eighteen years of her aphonia she had yielded at different times to the solicitations of her friends, and had consulted a number of physicians without, however, recovering her voice. After the age of thirty-two the patient rarely exhibited other manifestations of hysteria.

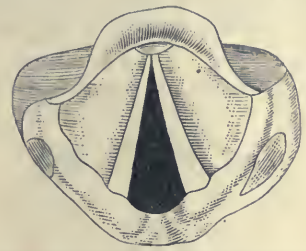
When I first saw this patient my impression was that the case was an illustration of those rare cases of bilateral paralysis of the adductor muscles of the larynx, or of bilateral paralysis of the recurrent laryngeal nerve, but a careful examination enabled me to exclude these diagnoses.

A physical examination of the chest gave negative results as to the presence of an aneurism or enlarged glands. The quiet and natural sound of the whisper was very unlike the labored whisper of true paralysis, and there was no phonatory waste. A laryngoscopic examination showed the mucous membrane of the larynx to be somewhat anemic, but I could find no evidence of any pathologic condition. There was a certain degree of mobility of the vocal bands, but they could not be approximated sufficiently for phonation. (Fig. 1.)

After examination I stated to the patient and her sister that I did not consider the disease incurable, but that it would require persistent treatment for at least three months. As they agreed to submit to the trial the following plan of treatment was car-

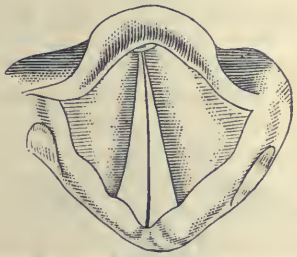
ried out: Every morning an internal laryngeal electrode was introduced into the larynx, and a galvanic current of one milliampère passed through the parts, the positive electrode being applied externally over the larynx. At first this was practised for only a few seconds at a time, but later the patient was able to tolerate it for several minutes. Every afternoon the faradic current was applied externally, the patient counting from one to ten during each application.

FIG. 1.



Functional paralysis of the adductors. Laryngeal image during phonation.

FIG. 2.



Normal laryngeal image during phonation.

For twenty-three days the applications were made mornings and evenings without any perceptible improvement in the voice. On the twenty-fourth day, however, the patient phonated for the first time, the sound being made as she repeated "eight, nine, ten." In spite of my efforts it was seven days before she again uttered these numbers aloud. After this I succeeded in obtaining a sound every two or three days until the forty-fourth day, after which no day passed in which the patient did not count some of the numbers aloud. My efforts were now directed to increasing the numbers which she could pronounce, and on the fifty-first day the patient for the first time counted from one to ten aloud. The voice was at first weak and wavering, but soon increased in strength, and the patient also occasionally spoke a few words aloud at home.

After the sixtieth day the visits were reduced to once daily, the galvanic current being applied first and the faradic current immediately afterward. She now counted without difficulty, and spoke frequently at home, but complained that she would "get out of breath" while speaking. This symptom gradually disappeared, and on the eighty-fourth day the patient was discharged, cured.

CASE III.—This is perhaps one of the most unique cases of hysteria of the larynx on record. The only similar case which I find recorded is one reported by Mechede[1] as bilateral paralysis of the abductors of the larynx. In this the dyspnea was so great that preparations were made to perform tracheotomy to prevent suffocation, when the patient suddenly recovered from her condition. In my own case, however, the dyspnea was so great that tracheotomy was actually performed, and not rashly, but after a deliberate consultation of four physicians.

On December 9, 1892, I was called by my friend, Dr. W. E. Brickell, to see a case of dyspnea in which asphyxiation seemed to be imminent. The patient was a young lady, twenty-two years of age, and a candidate for sisterhood in a convent. When seen the symptoms were not quite so alarming as they had been the preceding night, but still the dyspnea was very great, and the loud stridulous inspirations could be heard at a considerable distance, while the patient gasped with every breath. The voice had disappeared and the patient spoke in short, jerky whispers. The temperature was normal and the pulse 98°. Examination of the neck showed a cicatrix resulting from a former tracheotomy.

The following was the interesting history of the case given me by Sister C., a lady of unusual intelligence, who had attended the patient during her previous illness:

Miss G. had an attack of influenza in January, 1892, while at Milwaukee. She was confined to bed for five days, after which she resumed her duties as usual. In February she had a second attack, and a few days later lost her voice, being unable to speak, except in a whisper. Various remedies were administered without, however, restoring her voice. On March 24th a throat-specialist was called in, who, evidently surmising the hysterical nature of the affection, made an application of electricity to her throat and stated that she would soon recover her voice. I was unable to ascertain the manner in which the electricity had been applied, but presume that it must have been an external application of the galvanic or faradic current. At 10 o'clock of the same night alarming symptoms of dyspnea began to develop; the breathing became gasping, and the stridulous inspirations could be heard at a considerable distance. The nearest physician was hastily summoned, and he pronounced the trouble hysteria and ordered potassium bromid. As the symptoms became more distressing the physician whom she had consulted during the day was sent for, and he found the condition of the patient so alarming that he at once called for a consultation. At this consultation there were present four physicians, who pronounced the case as one of paralysis of [the abductors of (?)] the larynx. The condition had now become so grave that asphyxiation seemed imminent, and preparations were at once made to perform tracheotomy. On account of the condition of the patient it was considered dangerous to administer chloroform or ether, and the operation was performed without the use of an anesthetic. In spite of this, however, the patient appeared as

[1] Berliner klin. Wochenschr., 1878, No. 17.

insensible to the pain as if the operation were being done upon a cadaver. A tracheotomy-tube having been inserted the breathing became easier. The air of the room was kept moist and at a temperature of about 80° F. There was a slight elevation of temperature following the operation. The patient's respirations, however, were so weak that she could not expel the mucus which accumulated in the tracheotomy-tube, and this had to be kept constantly clear with a feather to prevent symptoms of suffocation.

The tube was left in position for twelve days. On its removal the breathing was unimpeded, but there was still aphonia, the voice not returning until five days later. Ten weeks later there was another but milder attack of dyspnea, which subsided in three days under the administration of pil. sumbul comp.

Miss G. was now sent to her parents, where her health improved, and there were no further symptoms of aphonia or dyspnea. Her urgent solicitations to return to the convent were acceded to, and in September she was sent to the convent at Chattowa, La., where she took charge of a small school. Ten weeks afterward she again lost her voice, which returned under the use of the compound sumbul pills.

In November difficulty in breathing again developed, and the patient was hastily sent to the convent at New Orleans for treatment. Dr. Brickell, the attending physician of the convent, was sent for, who prescribed quinin valerianate every four hours. The following day, the symptoms being still distressing, strontium bromid was ordered.

Desiring to demonstrate the hysterical nature of the attack, Dr. Brickell administered chloroform. During the first stage of the anesthesia the appearance of the patient became so alarming that the administration of the chloroform had to be discontinued, and every effort directed to prevent the asphyxiation that appeared imminent. The last rites of the Church were administered.

Early the following morning Dr. Brickell called me in consultation.

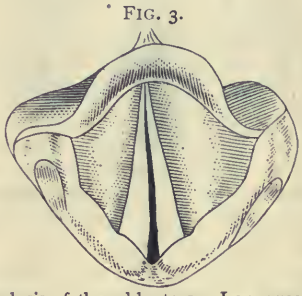
I had the patient placed in a chair and made a careful laryngoscopic examination. The first glance showed the cause of the dyspnea. With each inspiration the vocal bands, instead of separating, and leaving the triangular opening of the glottis, were drawn together, and gave rise to the stridulous inspiratory sound.

The alarming appearance of the patient, the duration of the attack, and the fact that tracheotomy had been performed on the patient during a similar attack, suggested that the case before me was one of true paralysis of the abductor muscles of the larynx, but a more careful examination, with a consideration of all of the features of the case, enabled me to exclude this diagnosis.

In the first place, all of the milder attacks were evidently of hysterical origin. We had also to consider the fact that, although the vocal bands were in apposition, as required for vocalization, aphonia existed, and, in true paralysis of the abductors the voice is altered, *but there is no aphonia*. The present attack occurred during the catamenial period, and the former violent attack had likewise taken place during a similar period. The laryngoscopic image (Fig. 3) also was not characteristic of true paralysis. Instead of the vocal bands, on inspiration, remaining lifeless or making feeble attempts to increase the glottic space, they were really drawn together with each inspiratory effort, resembling more a spasm of the adductors.

I therefore made a diagnosis of functional paralysis of the abductor muscles of the larynx. In view, however, of the serious termination of the previous attack, and as, moreover, the patient's condition appeared very dangerous, and more alarming symptoms of asphyxiation might appear again at any time, I advised that the patient be sent to the Eye, Ear, Nose, and Throat Hospital, so that, should I be wrong in my diagnosis, and the case really demanded it, tracheotomy could be performed without delay.

FIG. 3.



Functional paralysis of the adductors. Laryngeal image during inspiration.

FIG. 4.

Normal laryngeal image during inspiration.

My advice was followed, and the patient was at once conveyed to the hospital. Here Dr. H. W. de Roaldes, surgeon-in-charge, saw the patient with me, and agreed with my diagnosis.

Strychnin sulfate and dilute phosphoric acid were administered three times daily. Electricity, according to the method of central galvanization, was applied twice daily. Sulfonal was given at night, under the influence of which the patient slept, and, *during this time, the breathing became quiet*, the stridulous breathing, however, returning as soon as the patient awoke.

Under this treatment the dyspnea disappeared on the fourth day, and the laryngoscopic examination showed the normal movements of the vocal bands. Aphonia, however, still existed, for which I used the method of external faradization of the neck, as described. The third application was followed by

complete restoration of the voice, and the patient was sent back to the convent.

I informed the mother superior of the convent that, in my opinion, Miss G.'s health was not adapted to the restrictions and duties of the sisterhood, and advised that she should be permanently sent back to her parents. This was according done, and the young lady's health has since then been excellent.

136 GRAVIER STREET.

THE RESULTS IN NINETY CASES OF PULMONARY TUBERCULOSIS TREATED AT THE WINYAH SANITARIUM AT ASHEVILLE, N. C., FROM MAY 1, 1891, TO MAY 1, 1892, WITH A COMPARISON OF RESULTS OBTAINED WITH AND WITHOUT THE USE OF TUBERCULIN.

BY KARL VON RUCK, M.D.,
ASHEVILLE, N. C.

IN a paper presented to the American Medical Association, May 7, 1891, I reported my first series of 25 cases treated with tuberculin during the winter of 1890 and 1891. Of cases in the early stage, which I designated as Class A, I had 5, of which 3 were reported as apparently recovered, 1 as greatly improved, and 1 as improved.

Of cases in the middle stage, which I designated as Class B, there were 7 treated. Of these, 4 apparently recovered, 2 improved greatly, and 1 improved.

Of the cases in the third stage, designated Class C, there were 13 treated; of these, 4 were greatly improved, 6 were improved, 1 was slightly improved, and 2 were not improved.

During April of this year, two years later, a careful inquiry was made by correspondence with the patients, their friends or their physicians, as to their present condition, the object being to learn the permanency of the results obtained and the outcome of the cases after a period of two years.

The results of this inquiry were presented in a paper read before the American Climatological Association on May 26th, and were as follows:

The 5 cases belonging to Class A (early stage) have all recovered and report themselves perfectly well in every way.

Of the 7 cases belonging to Class B (middle stage), 6 have made a final recovery and reported themselves perfectly well, while 1 case relapsed, was treated again, and was again greatly improved.

Of the 13 cases belonging to Class C (advanced stage), 3 are still greatly improved, 3 others remain improved, and 7 have died. This gives, at the end of two years, among cases in the first stage, 100 per cent. of recoveries; among those in the second stage, 86 per cent. of recoveries and 14 per cent. with improvement; and in the last stage, 46 per cent. with improvement.

I desire now to report 36 additional cases treated with tuberculin between May 1, 1891, and May 1, 1892, and to show their condition at the time of their discharge, and also to give the results obtained in 54 other cases not treated with tuberculin, but otherwise managed and cared for exactly in the same way as were the 36 patients who received treatment with tuberculin additionally.

Before proceeding with these reports, permit me to state my general experience with tuberculin and my position as to the use of the remedy from the beginning to the present time.

When in Berlin in November, 1890, I protested there against the manner of employment of the remedy, especially against the use of doses that induced general symptoms, such as fever, severe aching, headache, nausea, loss of appetite, etc., and which were called a reaction; and immediately on my return to this country I warned the profession, in three or four short articles, against doses that were followed by such symptoms; and although I did not then know that the remedy would or could determine beneficial effects in doses that caused no such disturbances, I felt that the first consideration was to find a safe mode of administration.

My protests were, however, little heeded, and the sad experience with this remedy is common knowledge, especially in the advanced stage of the disease, to which its use was largely confined, because cases at an early stage held aloof after realizing that tuberculous patients did not all get well as was expected, and that deaths from pulmonary tuberculosis continued to occur as before.

The public press, which had raised false hopes among patients and their friends, reported cases of death, in which tuberculin had been given, in a manner which soon checked the enthusiasm. "Took Tuberculin and Died" was a frequent heading of such newspaper items. Those of the profession who had used the agent in large doses were necessarily disappointed, and those who looked on and watched became doubtful at first, and prejudiced next; so that, after the lapse of a few months, the patients themselves feared the remedy and would not have it administered except as a last resort; while the profession, with but few exceptions, absolutely condemned it as dangerous and useless, without even having given it a trial.

This stage was practically reached when I reported my first 25 cases.

Constant communication with the source of origin of the remedy, and the good results obtained by such men as Stricker, Langenbuch, Schmitt, Thorner, Schede, and others, assured me, however, that my results were, at least in a measure, due to the remedy; the more so, as, in my past experience, I had not seen as good and satisfactory improvement and

recoveries from other measures. At this pessimistic stage, disbelievers in the remedy attributed my reported results to climatic and general treatment and to the care and supervision of these patients while under treatment, and the prevalent prejudice forced me to restrict the use of the tuberculin to such patients as themselves requested it, and then only after obtaining the consent of the physician who had sent the patient to me.

Under such restriction the remedy was, from May 1, 1891, to May 1, 1892, further applied in 36 cases. During this period 54 patients were treated without it. The classification into stages is made as nearly alike as possible for both series of cases. In each case treated the sputum contained tubercle-bacilli.

REPORT OF 90 CASES OF PULMONARY TUBERCULOSIS

Treated at the Winyah Sanitarium, Asheville, N. C.
From May 1, 1891, to May 1, 1892.

36 cases treated with tuberculin:

Class.	Number treated.	Apparently recovered.	Per cent.	Greatly improved.	Per cent.	Improved.	Per cent.	Slightly improved.	Per cent.	Stationary.	Per cent.	Worse.	Per cent.
1st stage	6	5	83.3	1	18.7	...	...	...	...	...	...	...	...
2d "	15	8	53.4	6	40.0	1	6.3	...	...	...	...	...	...
3d "	15	...	...	7	46.6	5	33.3	2	13.3	1	6.3	...	...
Total	36	13	36.1	14	38.9	6	16.6	2	5.5	1	6.3	...	...

54 cases treated without tuberculin:

1st stage	6	2	33.3	3	50.0	1	16.6	...	...	...	...	...	...
2d "	14	2	14.1	6	42.8	5	35.7	1	7.0	...	...	...	...
3d "	34	...	...	3	8.8	12	35.3	11	31.3	4	11.1	4	11.1
Total	54	4	7.7	12	22.3	18	33.3	12	22.3	4	7.4	4	7.4

In Class A, I include all cases having one or both upper lobes involved, but without destructive changes and with the general health comparatively good. In class B, I include cases with circumscribed softening or cavitation, but still in fair physical condition. In Class C, the local disease was still further advanced, with more extensive breaking down and larger cavities, and with considerable constitutional impairment. If any doubt arose as to the proper classification, the patient's general condition determined the choice.

The average duration of the treatment was 152 days in cases treated with tuberculin, whereas it was 178 days in cases that did not receive tuberculin. Cases treated for less than a month are excluded from both classes, as are also such as arrived in such a condition that the case was absolutely hopeless.

Cases reported as apparently cured were free from all subjective symptoms; there was entire cessation of cough and expectoration, and the last specimen of sputum examined did not show the presence of tubercle-bacilli. In other words, there was apparently an entire restoration to health. Locally, beyond the evidences of more or less retraction of the affected portions of lung, there was no other evidence of the tuberculous process.

As greatly improved, I report all cases in which the tuberculous process seemed to be arrested and in which the subjective symptoms subsided to a degree that but slight morning cough or expectoration remained, the patient regaining his general health. I have no doubt that ultimately some of these cases will completely recover. This could probably have been brought about by further treatment; but such patients are, as a rule, unwilling to remain longer and are satisfied to take their chances for the future, so long as they feel perfectly well.

The terms "improved" and "slightly improved" are relative and depend upon a comparison between the conditions found on admission and those shown at the last examination. All patients reported as improved showed a gain in weight and strength. Of those treated with tuberculin (with the exception of one in Class C, reported stationary, who had made a gain of 3 pounds and lost it again), all gained in weight. The greatest gain was 31 pounds, the least gain, 2 pounds, with an average, for the first stage of 9 pounds; for the second stage, of 13½ pounds; and for the third stage, of 5¾ pounds. Of the patients treated without tuberculin, 39 gained in weight between 1½ and 26 pounds; in 8 others there was but a slight gain; in 9 cases there was a loss. The average gain in weight in cases in the first stage was 10¼ pounds; in cases in the second stage, 6 pounds; and in cases in the third stage, only 3½ pounds.

Comparing now the results, we have 6 cases in the early stage in each series, but we find that, with the addition of tuberculin to the treatment, 5 patients have apparently recovered and one has been greatly improved, while, without the remedy, there were only 2 recoveries, with 3 cases greatly improved and 1 improved. Still I consider the results practically the same, for I have no doubt that, by a continuance of the treatment in the cases that did not receive tuberculin, three greatly improved cases would eventually have recovered. There is, however, this difference, that the average duration of residence in the Sanitarium of the patients in the early stage receiving tuberculin was 133 days, whereas it was 184 days in those that did not receive tuberculin, and a completion of the treatment in the greatly improved cases would increase the difference still more. In the second stage, Class B, the utility of tuberculin appears

much greater and a greater saving in time is also manifest.

There were 53 per cent. of recoveries under tuberculin against 14 per cent. without it, and the difference in the improved cases is also equally manifest.

The average residence in the institution of the patients taking tuberculin was 138 days, as against 189 days for patients that did not receive it.

No real recovery resulted in either series of cases in the third stage. Under tuberculin there were, however, 46 per cent. at this stage greatly improved, while without the remedy there were only 9 per cent. greatly improved, and 35 per cent. improved, showing more than twice as good results from the use of tuberculin.

The average duration of treatment in the third stage in the institution under tuberculin is greater than for those who did not receive it; but this is owing to the fact that, on account of the less satisfactory progress of patients that did not receive the remedy, some of them became discouraged and returned home, whilst the patients having tuberculin were highly pleased and satisfied, and therefore remained longer.

From the evidence accumulated during two and one-half years' use of the remedy, and from the results obtained in my first series of 25 cases and those of the 36 cases reported in this paper, I believe myself justified in claiming that tuberculin has been a great aid in my work, and having seen no unfavorable effect whatever from its administration upon the plan described by me,[1] I believe myself justified in recommending its use, not only in the earlier but in all stages of pulmonary tuberculosis, when no contra-indication exists.

As the chief contra-indication to treatment with tuberculin, I consider the existence of septic infection, and the fever due to it, which, unless controlled by other means, necessarily leads to exhaustion of the patient. Tuberculin has no power over such processes, nor over many other complications that may arise in the course of chronic pulmonary tuberculosis, and no effects must be expected from it except in the purely tuberculous affection that has not advanced to the stage of breaking down.

From private information recently received it appears that Dr. Koch has by no means abandoned his endeavors for the improvement of this specific remedy for tuberculosis, and a substance is now being tested in the Institute for Infectious Diseases, in Berlin, which is eventually to supersede the present tuberculin. This is not given by inhalation, as reported in the journals, but is administered subcutaneously in the same way as tuberculin is now given, but it will not be presented to the profession until its advantage over the present tuberculin is clearly established in the clinical department of the Institute.

I have seen no advantage in Hunter's modification, and its use requires the same circumspection as does the original remedy, while it seems less constant in its composition and effect.

Neither was there any important advantage derived from the modification of Klebs, and I have come to the conclusion that if tuberculin is to be used at all, the original remedy, with which we have now the greatest experience, both as to its dangers and benefits, is the preparation to be employed.

[1] See Therapeutic Gazette, June, 1893.

CLINICAL MEMORANDUM.

REMOVAL OF THE GASSERIAN GANGLION.

BY CLAYTON PARKHILL, M.D.,
OF DENVER, COL.;
PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY AND CLINICAL SURGERY IN THE UNIVERSITY OF COLORADO; VISITING SURGEON TO THE ARAPAHOE COUNTY, ST. LUKE'S, DEACONESS' HOME, AND ST. ANTHONY'S HOSPITALS, ETC.

THIS history of a case of excision of the Gasserian ganglion was, at the time of operation, the first of its kind in Colorado. There were but three cases on record in America and five in Europe. The patient was referred to me at the Arapahoe County Hospital from the service of Dr. Eskridge, and the following history is clipped from his case-book:

Mary E. H., aged sixty, a native of Ireland and married, has been in the United States since her eighth year. She has lived in Colorado seventeen years. The family history is unimportant, except that there is a record of rheumatism on the father's side. The health in childhood was good and remained so until her twenty-eighth year, three years after her marriage, when she began to suffer from rheumatism. This affected the joints, especially the distal ones of the fingers. All these joints of the right hand are distorted by local deposits, except the thumb, but none of the other joints of this hand is affected. The distal joints of the index, middle, and ring fingers of the left hand show deposits. The larger joints of the extremities have occasionally been the seat of pain, but none of them except the left ankle is enlarged. From her thirty-eighth year to her fifty-second, she suffered considerably with these rheumatic pains. Eight years ago the first division of the fifth nerve on the left side began to be the seat of great pain. Soon afterward the second division became involved, and three years ago the third division. Eight years ago the second division of the nerve was excised at its exit from the infraorbital foramen. This gave relief for about five months. A second operation was then performed, in which all three divisions were excised at their exit from their respective foramina. This gave relief for about five months. A third operation was performed six months after the second. This was similar in character to the others, but confined to the second division, and gave no relief whatever. After this operation she began to take

morphin for the relief of pain. The dose was gradually increased until about one year ago, when she was taking 120 grains per week. She continued to take this amount on an average until her admission to the hospital. When the pain was unusually severe she would frequently consume from 60 to 120 grains in twenty-four hours. The drug was always taken by the mouth. During the last year she has inhaled chloroform from a bottle almost constantly while she was awake. In the ten days preceding the operation she had consumed four pounds of the anesthetic. At times it was impossible to obtain more than a few hours' sleep in the night. Since her admission to the hospital she has been made tolerably comfortable by taking from twelve to fifteen grains of morphin each day hypodermatically. In addition to this she has continued to take chloroform. Her nutrition is fairly good; the urine is free from albumin and sugar. Her face has an expression of suffering and is exquisitely sensitive to touch on the left side. There are no areas of complete anesthesia, although the left side of the nose and places on the left side of the face are partially anesthetic. The exacerbations of pain seem to have their beginning in the inferior division of the nerve. There is no paresis or paralysis of the muscles of the face. Hearing is fair and equal on both sides. The temperature, prior to the operation, ranged between normal and 101½°; the pulse between 101° and 128°.

On September 3, 1892, which was the day previous to the operation, she was given a brisk cathartic of Epsom salts and was carefully bathed. The left side of the head was shaved, and this area of the scalp, together with the entire left side of the face, was scrubbed with soap and water, afterward with sulphuric ether, and finally with a solution of mercuric chlorid (1:1000). Towels, sterilized in 1:2000 solution of mercuric chlorid, were then placed over the field of operation and confined there by bandages. On the following morning, the day of operation, a rectal injection was administered. Immediately preceding the operation the patient was given an ounce of whiskey with one-thirtieth of a grain of strychnin. Chloroform was used as the anesthetic. When the patient was under its influence, the cleansing process of the preceding day was again employed. The method of operation was practically that of Rose. The incision began just external to the outer canthus of the eye, and was carried backward along the line of the zygoma to a point immediately in front of the ear, thence downward to the angle of the jaw, thence forward along the line of the jaw so far as the facial vessels. This incision was deep enough to sever the skin and superficial fascia. The flap included by these lines was dissected up and turned forward. A dental engine was used to perforate the zygoma at either end for subsequent suture. Considerable embarrassment and delay were caused by the failure of this instrument to work properly. The bone was sawed between the drill-holes and turned down, together with the masseter muscle. It was found that the opening was somewhat small, owing to the unusual width of the zygoma anteriorly, and it was enlarged with bone-cutting forceps. The coronoid process was not drilled, but severed from the jaw, together with the insertion of the temporal muscle, and drawn upward. This exposed the pterygoid fossa. The internal maxillary artery was ligated in two places and cut between. Great difficulty was experienced on account of lack of light in the depths of the wound, until Dr. Jesse Hawes suggested the use of a mirror to reflect the sun's rays. This proved quite satisfactory, and the origin of the external pterygoid muscle was now peeled off from its attachment to the greater wing of the sphenoid. The foramen ovale was located, and a half-inch trephine was applied anteriorly and external to it. On the removal of the button, the intervening bridge of bone between the trephine-opening and the foramen was cut away with chisel and mallet. The interior maxillary division of the nerve was now followed into the skull. It was impossible to see the Gasserian ganglion, but passing a small curet along the nerve to the location which the ganglion should occupy, it was scraped away. The wound was flushed with sterilized water, and the parts brought again into their normal relations. Instead of reuniting the coronoid process to the jaw, it was cut away. The zygoma was not united to the bones, but simply sutured to the temporal fascia. I believe that this was the first time that this procedure has been made use of, and the result was so satisfactory that I shall hereafter pursue this method. The time saved in drilling the zygoma and introducing the sutures is very considerable, and if equally good results can be obtained by suture to the fascia, it will certainly tell in the patient's favor. The skin-wound was united by interrupted silk sutures. No drainage was used. Small pieces of protective were placed over the wound, over this a few layers of sterilized iodoform-gauze, and this covered by an abundant dressing of simple sterilized gauze, sterilized cotton, and a bandage.

The patient reacted well and her progress to recovery was uninterrupted. The pain was completely and permanently relieved. The temperature on the evening following the operation was 101.4°, the next morning 99.8°, and from that time it rapidly declined till the third day following the operation, when it was normal and afterward remained so. On the seventh day the wound was dressed and found perfectly healed. The morphin was gradually withdrawn until the fourteenth day, at which time she was taking half a grain per day. On this date she was discharged from the hospital. Up to the present time she has not experienced the slighest return of the pain. A period of ten months is not sufficiently long in which to estimate the permanency of the result obtained by this operation, but if the good following it is in proportion to the difficulty of the procedure, there can never be cause for complaint.

HOSPITAL NOTE.

CARCINOMA OF THE ESOPHAGUS.

German Hospital, Philadelphia.

SERVICE OF ADAM TRAU, M.D.

[Reported by DR. ALFRED HAND, JR., Resident Physician.]

L. S., a male, aged seventy-eight years, was admitted June 19, 1893, with a history of having been troubled for some months with a profuse muco-purulent expectoration, out of proportion to the accompanying slight cough

He mentioned some slight difficulty in swallowing, but this did not seem to be present after he entered the hospital. He complained of diarrhea, which was easily controlled, and of pain in the stomach and in the lumbar region. These pains were constant, but not violent.

There were rather large, moist râles at the left apex, and prolonged expiration at the right, so that the case was thought to be one of pulmonary tuberculosis in old age, especially as the temperature was very irregular; but no tubercle-bacilli were found in the sputum. The diet of milk, eggs, bread, broth, and cereals was swallowed without difficulty.

The patient emaciated rapidly, and died about two weeks after admission.

At the post-mortem examination, purulent bronchorrhea was found in both lungs, with a small, encapsulated, cheesy mass at the right apex. Each pleural cavity contained a large amount of fluid. There was a large, cauliflower-like carcinoma growing from the inner surface of the esophagus, in its middle third, directly back of the heart. (See annexed illustration.) The lumen of the esophagus was but slightly narrowed. The intoxication to which the growth gave rise was well shown by the spleen, which was enormously enlarged and almost fluid; and by the liver, which was soft and dark-red. The left kidney contained seven cysts, and the right three cysts. The pylorus was the seat of fibroid thickening.

The University of Colorado announces that on and after the 1st of September, 1895, attendance on four annual lecture courses of nine full months in length will be required of all candidates for graduation.

MEDICAL PROGRESS.

[*Multiple Calculi of the Bladder and Prostate Gland.*—Estes (*Lehigh Valley Medical Magazine*, vol. iv, No. 4, p. 137) has reported the case of a farmer, twenty-five years old, in which seven years previously, without appreciable cause, there appeared a urethral discharge, at first slight but subsequently profuse. The possibility of venereal infection was strenuously denied. Shortly afterward there was complaint of pain in the penis, about an inch behind the glans. The man continued at work for two years, but finally the symptoms became so pronounced that he was compelled to give up. There was no especial difficulty or pain in micturition until within a period of a few months. There had never been symptoms of renal calculus or pain referred to the bladder. Some five months before coming under observation, the man had had an attack of acute illness, attended with fever, burning pain, and swelling far back in the perineum about the lower part of the rectum, which was diagnosticated as acute prostatitis. The urgent symptoms were relieved by a fairly copious discharge of pus *per urethram*. From this time the man was confined for the most part to the house and for the last four weeks to bed. He was now emaciated, presenting an appearance of anxiety, suffering, and hectic. Micturition was unattended with pain; the quantity of urine voided was thought to be about the same as usual; it was passed more frequently than in health, though it could be retained for three or four hours without much difficulty. Examination with a searcher disclosed the presence of what seemed to be a large, rather soft, and immovable calculus. On rectal examination the prostate was found moderately enlarged and tender. The man was weak and his pulse was rapid and small; his appetite was impaired and he was daily having fever and sweats.

The condition seeming to be desperate, immediate operation was advised. Fourteen ounces of urine were withdrawn by means of the catheter. Examination showed the secretion to be turbid and to have a fetid odor; the reaction was alkaline and the specific gravity 1030. There was no response to tests for albumin and sugar. In the sediment that formed upon standing, phosfates and a little pus were found. A dose of calomel was given and followed by a saline. The bladder was washed out during twenty-four hours with a warm solution of boric acid. Upon careful examination of the bladder and prostate under anesthesia it was concluded that the large mass felt at the base of bladder on rectal examination was a stone, and the examination with the searcher showed that this was not only large, as well as soft externally, but also fixed. It was therefore decided to perform supra-pubic cystotomy. The peritoneum not reaching down upon the anterior surface of the bladder, the peritoneal cavity was inadvertently opened, a small amount of urine gaining entrance. A fold of peritoneum was at once caught and stitched to the margins of the incision; then the wall of the bladder was brought upward and joined to the abdominal wound by sutures; finally a puncture was made into the linea alba, and a stream of weak sterilized saline solution introduced into the peritoneal cavity through the nozzle of fountain-syringe. The incision into the bladder was

now enlarged, a finger introduced and a large encapsulated or encysted stone found. It proving impracticable after several attempts to retain it within the grasp of the forceps as it lay, after much care and difficulty the stone was separated from the walls of the bladder, turned, grasped, and removed. It was then found that there was evidently another pretty large stone at the bottom of the cavity occupied by the first, from which it was separated by a layer of soft tissue. This stone could not be extracted from above without lacerating what seemed to be the trigone of the bladder; so that a median perineal incision was made, and with a great deal of difficulty and much loss of blood a second stone was extracted. No other concretion could be felt. The patient being now almost exhausted by loss of blood, the lower cavity was packed with gauze, a fresh supply of hot saline fluid poured into the abdominal cavity, a glass drainage-tube introduced into the pelvis, as much fluid as would come out being permitted to escape from the abdominal cavity, a large rubber drainage-tube introduced into the bladder, and the patient hurried to bed. He required active stimulation for a time, but rallied well, and on the second day was doing nicely. Everything connected with the operation did well for a time, until the evening temperature became slightly elevated and the general condition began to fail somewhat. A little pus now began to appear in the perineal wound. Upon introducing a probe a hard mass was found near the neck of the bladder in a cavity of the prostate, and a small oval stone was removed by means of the dressing-forceps. Immediately about an ounce of pus escaped. On further examination two other stones were detected and removed in the same way. Thereafter the fever abated and the general condition improved. The perineal wound still continuing to discharge a little pus, after a week another examination was made and an additional stone found, and in a few days still another one was found and removed. Thereafter the man steadily improved, and he was finally dismissed, fifty days after his admission into the hospital. The aggregate weight of the seven stones was 1480 grains.

Neuritis of Infectious and Toxic Origin.—In illustration of the diversity of origin of peripheral neuritis, BARET (*Archives de Méd. et de Pharm. Milit.*, 1893, No. 7, p. 49) reports three interesting cases, in one of which the poison of enteric fever acted as the cause; in another, the syphilitic poisoning; and in the third, alcohol. The first occurred in a man, twenty-seven years old, in which upon recovery from an attack of enteric fever, complicated by myocarditis, great weakness was found to exist in the hands. Examination disclosed a condition of wasting, with impairment of tactile and thermal sensibility, with reaction of degeneration, extension of the proximal phalanges and contraction of the distal phalanges, and vaso-trophic changes in the peripheral distribution of the ulnar nerves. Decided amelioration followed upon tonic treatment and rest.

The second case occurred in a young man convalescent from erysipelas, who gave an antecedent history of syphilitic infection. The symptoms simulated those of anterior poliomyelitis. There were present weakness, slight wasting, numbness, and tingling in the lower extremities, with analgesia of the soles of the feet and enfeeblement of the patellar tendon-reflexes. Pressure upon the muscles gave rise to a disagreeable sensation, while pressure upon the nerve-trunks caused severe pain. The muscular sense was preserved. In the upper extremities weakness and wasting were less marked, while paresthesia and anesthesia were more pronounced. There was also slight convulsive tremor of the fingers. Micturition and defecation were not deranged and there were no cerebral or ocular complications. The administration of strychnin and sulfurous baths was followed by no improvement. The patellar reflexes became entirely abolished and the muscular sense in the lower extremities totally lost. Treatment with mercurial inunctions and potassium iodid was now instituted, but was suspended upon the development of a left pleural effusion, for the relief of which puncture was several times performed. The general condition became quite poor; the legs became edematous; and it was found that thrombi had formed in the femoral arteries. Antisyphilitic treatment was now resumed, and decided improvement was immediately noted in the local and general condition.

The third case occurred in a man, twenty-three years old, addicted to alcoholic excess, who presented symptoms suggestive of posterior spinal sclerosis. For a number of months it had been observed that fatigue was induced with undue readiness; the gait was awkward; lancinating pains appeared paroxysmally, particularly in the distribution of the sciatic nerves; at night there occurred cramps in the calves of the legs. There was, however, no girdle-sense and no visceral crises. Upon the left thigh and leg were circumscribed areas of analgesia, while upon the soles of the feet all forms of sensibility were impaired. The skin-reflexes were preserved. The patellar reflexes were exaggerated, but there was no ankle-clonus. There was a tendency to foot-drop. Gait and station were quite ataxic. Tremor was marked in the upper extremities. The shoulders and arms presented several disseminated areas of analgesia. Marked improvement supervened upon a milk-diet, withholding alcohol, and the administration of large doses of iodid.

Radical Operation for Unincarcerated Hernia.—LEUW (*Archiv für klinische Chirugie*, Bd. xlvi, H. 1, p. 40) analyzes the results of a radical operation upon 119 hernias of various kinds in 106 persons, performed by Professor Kocher at Berne, and concludes that if carried out with appropriate aseptic and antiseptic precautions, the radical operation is *per se* not a dangerous operation. If other therapeutic measures (trusses) fail to afford relief for an existing hernia, the radical operation is indicated in early childhood. While youthful age is an indication for the radical operation, advanced age does not of itself constitute a contra-indication. Constitutional disturbance or disease of other important organs would be a contra-indication. The success of the operation is dependent first, upon the method adopted; secondly, upon the aseptic course of the case; and finally, upon the degree of separation of the columns, the size and character of the hernia, and whether there be a single hernia or more than one. The result is in slight degree governed by the age of the individual, but is quite independent of the age of the hernia.

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SATURDAY, SEPTEMBER 16, 1893.

TENOTOMOMANIA.

At the meeting of the Ophthalmic Section of the Pan-American Medical Congress there was, with a few exceptions, a manifest inclination toward a more conservative, that is to say, a truly medical treatment of heterophoria or insufficiencies of the ocular muscles. One entire day was devoted to the discussion of these problems, and the members were delighted at the evidences of carefulness and sanity manifested.

It seems to be largely admitted that, generally speaking, we are at present or have but lately been indulging in an exaggeration of the function and importance of the surgical aspect of medicine. "The glamor of successful surgery" has so bedazzled the eyes of the lay world that our own professional perspective is at least very faulty, and instead of preserving a sane sense of the proper proportions we have too thoughtlessly acquiesced in the popular craze of glorification of all men and things surgical. To be a good general physician certainly requires as great intellectual and professional ability as to be a great surgeon. Every conservative physician—nay, every frank surgeon—will admit that surgical gynecology has often and injuriously intruded itself into the proper domain of general medicine and that many unnecessary operations have been and are still daily being performed; and unnecessary surgery is medical crime. Strictly speaking surgery is not medicine, it is the despair and renunciation of medicine, a *dernier ressort*, as it were, and has place only when cure is beyond the means of the therapeutic art distinctly and properly bounded. When the physician, the healer and curer by physiological methods, can do no more, then arises the need of the surgeon. However glorious his office, however splendid his achievements, and however successful his results, we should never lose sight of the proper limits both of his field of work and of those of the general physician. Entirely too often we have thus lost sight and sense of these boundaries, and the surgeon has often arrogated to himself work that did not belong to him.

In ocular therapeutics, especially as regards imbalance of the extra-ocular muscles, there has been an outrageous excess of surgical impertinence, a genuine tenotomomania. We have flung conservatism and a healthy judicial attitude of mind to the dogs and have indulged in a kind of surgical debauch, with reckless disregard of physiology, the general condition of the patient, and of central and allied abnormality. Where else in the whole domain of surgery and medicine do we witness proceedings allied to those of tenotomy for heterophoria? No one will contend that these cases have the faintest resemblance to the contracted tendons and plainly morbid conditions existing in talipes. Where else do we operate on functionally paretic or incoördinated muscles?

Every ophthalmologist also knows, too well knows, of many cases wherein ocular tenotomies for insufficiency have not cured or where they have made matters worse. Everyone knows that the results of the healing after tenotomy are entirely doubtful, and often disappointing. Everyone knows that the operation to relieve one or two degrees of imbalance requires a superhuman delicacy and accuracy on the part of the operator. Pretence of possession of this accuracy is simply silly.

It is also fast coming to recognition that, owing to the very peculiar and complex interrelations and functions of the ocular muscles, as well as from a hundred other reasons, philosophic or experiential, these muscle-troubles, supposed, and so-called, are often not muscle-troubles at all; they are not always peripheral in origin or in essence, but are often of central origin. The malfunction resides in the innervation and the innervating

centers. For example, upon a patient with eighteen degrees of esophoria, complete tenotomies of both internal recti have produced temporary muscle-balance, but in ten days the eighteen degrees reappeared and the man stood just where he was before the operation.

In the first place many of these incoördinations are due to general disease, such as anemia, tabes, pelvic disorder, syphilis, etc., and require proper general treatment to reëstablish healthful normality of function. One of the speakers of the Congress detailed a number of cases that had come under his observation, in which operations on the muscles had been worse than useless because the paresis was plainly due to cord-disease.

Then, again, a large number of these incoördinations are due to the uncorrected ametropia. The tenotomist, despite himself and despite his remonstrance, ignores the fact or depreciates its importance, that the refractive error produces muscular defect, and the correction of the ametropia either relieves the reflex symptoms or cures the muscular imbalance. It is perfectly possible, nay, it is highly probable that hyperopia and hyperopic astigmatism may be the chief etiological factors in the production of *both* esophoria and exophoria. A single cause may produce diametrically opposite results, according to its strength and according to the circumstances and conditions among which it operates.

Finally, in a large balance of cases not due to general disease, or to ametropia, it is certain that gymnastic exercises may reëstablish the desired muscular equilibrium. All success by this method depends upon the kind of exercise, and how it is carried out. In the case of other paretic muscles (supposing, for argument's sake, that the muscles are primarily at fault) we do not cut them, but we endeavor to stimulate them to healthy action and development by gymnastics, by hygienic and physiologic measures. Why not also do the same with the muscles of the eye?

There is a proper place for tenotomy for insufficiency, but it should be resorted to only after the foregoing methods have been tried.

We congratulate the Ophthalmic Section of the Pan-American Medical Congress on the noteworthy success of its entire series of sessions, but especially upon the fact that there was started a healthy conservative reaction against the excesses of the over-enthusiastic tenotomist.

POPULAR INSTRUCTION IN THE PREVENTION OF TUBERCULOSIS.

THE response on the part of physicians as regards the distribution to tuberculous patients and their friends, of pamphlets to prevent the spread of the disease, has been unexpectedly gratifying. Several thousands of the pamphlets have already been ordered.

We have also received from The Pennsylvania Society for the Prevention of Tuberculosis copies of two pamphlets, issued by the Society and distributed gratuitously. The pamphlets contain more words than that of DR. ROCHESTER, but in some ways possibly serve the purpose in view somewhat better. We shall therefore recommend our correspondents to apply to the Society named, as it furnishes a formed and convenient means of carrying out the excellent design. So far the Society has issued two circulars, each containing four octavo pages. Tract No. 1 is entitled "How to Avoid Contracting Tuberculosis (Consumption)," and Tract No. 2 is headed "How Persons Suffering from Tuberculosis Can Avoid Giving the Disease to Others."

Physicians will at once recognize that this is a "labor of love," and that instead of buying pamphlets they may accept the Society's offer of membership for the sum of one dollar, and get the tracts *gratis*, in such amounts as they can advantageously use. But of course it is understood that the tracts will be furnished upon application to the Secretary whether one is a member or not.

The Secretary is E. LESLIE GILLIAMS, and his address is 806 Walnut Street, Philadelphia.

EDITORIAL COMMENTS.

The General Session and the Section.—At the meeting of the Pan-American Medical Congress, one of the most successful Sections resolved at its first meeting to carry on its section-work during the meeting-hours of the General Congress or General Session. This was in no disrepect to the General Congress, of course, but was necessitated by the amount of work to be done by the section and greater interest in its proceedings. The resolution was faithfully carried out and no one regretted it. The earnest workers wisely preferred work to east wind. According to an old medieval medical writer, east wind is peculiarly prone to produce flatus, and should therefore be carefully avoided!

Limit the Reading of Papers at Least to Twenty Minutes.—One of the Sections at Washington resolutely resolved to limit all speakers to twenty minutes, no vote being allowed to extend the time of anyone. The result was a series of bright, condensed, and interesting papers, the

attention of the audience never flagging and satisfaction expressed by all. Another, perhaps many other Sections, gave "courtesy" to one and so courtesy to all (except the listeners), with the result that some writers read for an hour or two, to the great disgust of everybody. And to cap the climax, some of the hour-long papers were in Spanish! In these cases the punishment most excellently fitted the crime.

The American Medical Association.—By the special committee of the American Medical Association, it has been resolved to recommend to the general business committee of the Association a change of the date of the next meeting of the Association, from the first Tuesday in May, 1894, to the third Tuesday in May.

SOCIETY PROCEEDINGS.

FIRST PAN-AMERICAN MEDICAL CONGRESS,

Held at Washington, D. C., September 5, 6, 7, 8.

(Continued from page 308.)

GENERAL SESSION.

THIRD DAY—SEPTEMBER 7TH.

THE principal address of this session was delivered by MR. ERNEST HART, OF London. He said:

MR. PRESIDENT, LADIES, AND GENTLEMEN: We are told traditionally that Sir Astley Cooper, one of the great surgeons of this century, who remains with us not only as a model of a brilliant surgeon, but an accomplished gentleman, was in the habit of addressing every candidate for a degree from the college with which he was connected, something after the following manner: Gentlemen, you are about to enter upon a noble and difficult profession, and your success will depend principally upon three things: Firstly, upon your knowledge; secondly, upon your continuous industry; and thirdly, upon your moral character. Without the first, no one could wish you to succeed; without the second, industry, you will never be able to succeed; and without the third, strength of moral character, even if you do succeed, success can bring you no happiness. Now, those words might form a very adequate summary, a short text-book of the conduct, private dignity, and etiquet in relation to public affairs, of all medical men; and, one might very well ask whether anything more than that is at all necessary, whether there is any necessity for a detailed and elaborate code when the whole philosophy can be summed up in so few words. And just now in our country some do ask that question, and I think to some extent in this, it has become a question as to just how far it is necessary to add to the simple rules of ethics, which give the conduct of Christian and honorable gentlemen in all professions. Is it necessary to add to this a detailed code of medical ethics or of medical etiquet? That question is one which has been solved. It was held in no doubt until these recent times. But, nevertheless, I think it is clear that never at any time, if there were a necessity for such a code, could that necessity be nearer and more apparent than at the present moment. Under the stress of a developing civilization, with the temptations and difficulties induced by the enormous facilities for advertisement, the enormous temptations for advertising with all the arts of those who make advertising a business, and the profit to tempt the medical man from the ancient bond of modesty and diffidence, there is now the strongest reason for fortifying every professional man against the inroads of modern temptations, by a code so precise, by deductions so exact, so comprehensive, and so far-reaching that he shall never be overcome by such temptations, but shall be able to know at once, and under all circumstances, what is his duty, what is the rule of his profession in any one particular case in which he may be tempted. By possible excuses, which his vanity, his interest, his natural love of prominence suggest to him, he may be tempted to decide a doubtful case in his own favor and against the general good and welfare of the profession as a whole.

Now, I want to say that such a code as this does exist, and exists upon a logical and strong basis, exists for the benefit of the public, at least as much, if not more than for the benefit of the profession; that it is not a trades union business, it is not an elimination of public liberties and rights for the benefit of a private interest, but that it is, on the contrary, a movement which is made far more for the interests of the public in general than for the interests of the profession, and that applies not least, but even more to those regulations of the medical code which have from time to time been stigmatized by the public press as narrow and oppressive, and stigmatized as useless by those who call themselves the bolder and younger spirits among us. But, not even the youngest of us, as you know, are infallible, and I think it is precisely the youngest and boldest which, in this case, are likely to go wrong.

Now, first of all, let me remind you that the medical profession is only one of many professions. We have standing alongside of us the profession of law and the profession of the church. It is interesting, from a universal standpoint, to consider what is the code of the legal profession, why is that code justified and how does it compare with the medical code? Just before I came to attend this Congress, I wrote some legal men concerning some details of the legal profession. One of them said: After all, the general spirit of a code may be summed up in a few words: That, every practising lawyer ought to be a gentleman and do only what is honest and honorable and fair to others, and, if he does not act like a gentleman and is not honest and honorable and true to his profession, honorable men ought to have nothing to do with him. (Applause.) Now, you notice the deduction, that if he does not, honorable men of the profession ought to have nothing to do with him. That is precisely our position to-day. (Applause.) Questions in the bar and with the legal profession are strengthened by this, that the discipline of the bar is absolutely in the hands of the Attorney-General of England for England, and is decided without appeal, so that any solicitor who is guilty, not only of any technical offense against his duty as a lawyer, but any solicitor who is guilty of anything which brings dishonor upon him as a gentleman is frequently not only temporarily suspended and subjected to deprivation of the right to plead, but the right to practise his profession. My friend sent me a case which occurred last June, in which it was decided that a solicitor in a provincial town who had, in virtue of

certain house-property which he held, been a party to immorality, and used the house for immorality, and had left a stain upon his character as a gentleman, and for that he was excluded from legal practice for a number of years, subject to reinstatement upon proof of good conduct. So, the legal profession has a code far stricter than ours, but a code which everyone admits is for the benefit at least as much of the public as of the profession.

Now, let us take one or two other examples of legal etiquet. There are several things a lawyer must not do He may not conduct a speculative suit. That is to say, he may not conduct a suit in which his pay depends on the issue of the suit. Well, that looks like a restriction upon liberty, O, how that word liberty is licensed! Liberty is a blessed word, but compulsion is a more blessed word. (Applause.) That looks like a restriction upon liberty, but if a lawyer is personally and financially interested in the result, and the case goes against him, he is angry with the judge and is apt not to do his duty, because it is his duty to see that justice is secured. So, although it looks like a restriction on the lawyer, it is only right he should have no financial interest in the case he conducts. Many men do. There are here many of what you call shyster lawyers. They are not the men of whom the country is proud. If a man does not regard the code of ethics, honorable men should have nothing to do with him. So with many other elements in the legal code of ethics, which I will not dwell upon.

I will pass at once to the code of the medical etiquet, and I will ask you to consider whether you are of the opinion that you can safely cast aside all the precedents of past experience, all that you may call the case law. That is the question and deductions which have been carefully and deliberately reached in respect to the applications, to the daily applications of medical life of the general principles of ethics. Now, if men abjure the abstract and moral character, no doubt a few abstract and moral laws would suffice for his daily needs. For example, a medical man is prohibited from consultation with quacks. Now, in order to determine the meaning of the word quack, I have looked up Dr. Johnson's defition. "Quack—a boasted pretender to arts which he does not understand; a boasting pretender to physic, one who proclaims his own medical abilities in public places; an artful tricking practitioner in physics." Thus, you see there is no distinction between the quacks who have medical degrees and the quacks who have not. Moreover, no respectable physician should advertise. That is a method of the quack. He is a person who seeks advertisement. This advertisement may be in the way of an interview by a representative of the secular press, or it might be by a published letter, by the description or criticism of some new alleged system of treatment, or it might be by divulging the secrets of the sick-room and reporting without authority of permission on the incidents and course of the illness of the distinguished or notorious somebody, who Dr. ——— is treating. Such arts are in direct contravention of medical etiquet, and deserve the scorn and reprobation of every honorable person as well as every honorable medical man. (Applause.) It is in the interest of the public in general, of the whole community, that the medical profession and every member of it shall be worthy of the confidence of the public, and that the physician shall earn his reputation, not by dishonest means, not by advertisement of himself or his books, not by the prominence accorded to him by the journalist, but by his colleagues of accepted and approved knowledge, and in view of his conscientious and modest application of that knowledge. As to the rule which prohibits the medical man possessing or profiting by any secret remedy: Not only is this an offense against professional morality, but it is a source of great public danger as well. The physician owes his knowledge as well as his capacity for practising medicine to the open communications of by-gone practitioners, and daily he continuously receives such aid from his colleagues. Indeed, it is to their published knowledge and experience that he owes the greater part of his means and ability of practising his art. A new treatment, drug, or medical dogma, is like a doctrine, dogma, or deduction, in theology. The one is for the purpose of aiding the body, for physical salvation, while the other is an aid to spiritual salvation. From traditional law, and in virtue of the mission of the physician or priest, both are alike the common birthright of humanity, and any man who for profit keeps as a secret a new treatment or a new doctrine is a traitor not only to his profession but to all humanity. The physician who trades in or palters with secret remedies is untrue to his obligations, unfaithful to the world, a shame to himself, and a dishonor to his calling. It is only right that he should be treated accordingly under the professional code, and that he should not have a standing equal to the man who is true to his profession, true to humanity, and true to himself. (Applause.) Nor can the alleged value of any so-called secret remedy be held to condone such an offence, for never in the whole history of mankind has there ever been one of these so-called secret remedies which when divulged or discovered by examination has proved to be of the least value.

Next, we are not permitted to consult with homeopaths. This portion of the code of medical ethics may be justified as a principle of elementary morality. How can we believe in their ability, or how can we appreciate the medical capacity or the fitness to undertake the treatment of disease, of the so-called homeopathic physicians, who hold that drugs, which given internally will produce certain symptoms of disease, are the proper remedies for those maladies? For example, we do not believe that medicines that produce skin-reddening are the proper therapeutics for erysipelas, that leucorrhine should be administered for leucorrhea, syphiline for syphilis. We do not agree that all chronic maladies arise from syphilis, sycosis, or itch. How can we, under these circumstances, consult together? It would be impossible for us to agree. Further, we do not believe that medicine acts with an intensity proportionate to the smallness of the dose, or that there is any utility in prescribing in accordance with these principles. What would you think of giving a decillionth of a grain of medicine! A dose so small that it has been calculated that if every being on the globe were to take it once a minute for thousands of years they would not finish a single grain. Again, we could not agree with them that the strength of a medicine increases according to the number of shakes given to the bottle containing it. We hold that such treatment is futile and senseless, and that

to pretend to consult with those who thus designate themselves and who make assumptions so irrational, would be a dangerous farce and would cover, to the great detriment and perilous misleading of the public, a practice which is either a dying delusion or a galvanized fraud with the false mask of respectability. It is true that some who call themselves homeopaths do cure diseases by prescribing physiologic doses, but it is not for us to countenance such fraud and dishonesty, for the homeopath who does this is dishonest. On the other hand, if he prescribes according to the rule of Hahnemann, he gives to the patient that which is valueless. It would be as well to ask a Catholic priest to administer religious consolation to a dying patient in consultation with an agnostic, as to ask a scientific physician to consult with a homeopath. The whole proceeding is dishonest on the one side or the other.

Again, a medical man cannot take charge of the patient of another without previous consultation and approval of the physician who previously had the case in hand, or rather under whose care the patient was at the time. A physician is prohibited criticising or advising a patient on any matter relating to another man's work, except under certain stated circumstances and conditions. The consultant is forbidden under any circumstances to take the place of the physician who called him in. All of this is as much, at least, and perhaps more for the public good than for the good of the profession and of the individual.

Dr. Gihon reported the resolution adopted by the Section on Hygiene recommending the suspension of immigration into the countries of America from those countries in Europe and Asia in which cholera is raging. The report was referred to the International Executive Committee.

Fourth Day—September 8th.

Dr. Garcias, of Colombia, spoke (in Spanish) briefly, explaining why more of his countrymen were not present at the Congress, and offered congratulations and thanks on behalf of his colleagues.

Dr. Ferd. C. Valentine, ex-Surgeon-General of the Honduras Army, and present editor of the *Medical Press*, of New York, gave a pleasant and interesting address as to Honduras and its relations to the American people.

The International Executive Committee's report was read by Dr. Reed, and considered such questions as those of a permanent organization of the Congress and its Sections; resolutions referred from the Sections, especially those from the Sections on Hygiene, Climatology, and Demography; the establishment of National Departments of Health, etc.; the suspension of immigration from cholera-infected ports, etc. From the Section on Hygiene Dr. Gihon reported the following resolutions:

Resolved, by this Section, that the following resolutions be added to the resolutions already adopted and reported to the general session relative to temporary suspension of immigration, to wit:

Resolved, that in the opinion of this Section the thorough disinfection, without discrimination, of every piece of baggage, dunnage, or article of personal effects belonging to the immigrant classes and to crews of immigrant ships, and the exaction of scrupulous cleanliness of all vessels arriving at Pan-American ports should be rigidly enforced at American ports, supplementing and enhancing the protective value of similar treatment at the ports of departure, especially at times when cholera exists in Europe, as a sanitary precaution, second only in efficiency and importance to the temporary suspension of immigration.

Resolved, that it is also the opinion of this section that the habitual and thorough disinfection of all personal effects liable to carry contagion of immigrants to the American hemisphere, and of dunnage of crews of vessels carrying the immigrants from any quarter of the globe, and the exaction of scrupulous cleanliness of all vessels arriving at American ports should be enforced at all times as the most efficient means of greatly lessening the introduction into this hemisphere of the seeds of various contagious diseases, which are now and have been in the past almost constantly conveyed by the immigrant classes and distributed widely among the population of this hemisphere.

Section on General Surgery.

First Day—September 5th.

Dr. John B. Hamilton, the Executive President, delivered an address. He said that the rapid evolution of surgical knowledge is one of the wonders of this remarkable age, and surgeons may fairly claim that their own branch of medicine has kept equal pace with the stupendous advances made by the collateral sciences. A review of the surgical progress of the last decade alone constitutes one of the most brilliant pages of the history of medicine. And yet one must remember that all scientific progress is based on antecedent fundamental facts, discovered by slow, laborious, and painful steps.

The labors of Darwin, Huxley, Herbert Spencer, Pasteur, and Lister, in the last decade, have made possible the practical successes in the present decade.

The subject of surgical bacteriology, which includes the chemical study of microbic products, has still much to disclose, but we already base our practice on the immortal discovery of Pasteur. Bacteriology has added much to our knowledge of tuberculosis, and given more precision to its treatment, but that knowledge is still imperfect, and its treatment far from satisfactory. Much less has bacteriology added to our knowledge of the carcinomata, which still remain one of the mysteries of medicine. We have for years studied the varying departures of tissues from the normal to the abnormal type, and bacteriologists have in vain sought to connect the atypical structure of carcinoma with some bacterial development. The study of embryology and atavism seems at present the most probable avenue to the truth.

What may we hope for the future of surgery?

It seems likely at this day that improvements in technique will continue to occupy the surgical mind until some epoch-making discovery in physiology shall have been made. It is not likely that the present generation of surgeons will witness another discovery as far-reaching as that of Pasteur. We must digest and fully assimilate the discoveries of the bacteriologic epoch; that process will probably fully occupy our time and that of our immediate successors. It is true that we may have

some help from advances in the collateral sciences; transillumination of the body, for example, may be yet fully developed in our time, instruments of precision as aids to hearing and vision may greatly assist us in making our present knowledge useful, but the great outlets to human life, such as carcinoma, in all probability will have their genesis understood only by the surgeons yet unborn. When that time shall have come, carcinoma and tuberculosis will be classed among the preventable diseases. These two affections have cost more human lives annually than cholera or yellow fever, and yet no government has ever set on foot any systematic and regular inquiry into their causation or propagation. It is true that the study of tuberculosis in cattle has been the subject of much attention by the Bureau of Animal Industry, but so far as the human race is concerned little has been done in the direction indicated.

DR. ROBERTS, Chairman of the Section on Anatomy, delivered a short address. DR. EDWARD A. TRACEY, of Boston, Mass., read a paper entitled "A Brief Splint-Technology for Surgeons." The objects of this paper are: to treat in detail of a new material and method used in surgical splint-making, to urge the surgeon to become the maker of suitable splints for cases occurring in practice, and to indicate lines of procedure in apparatus-making.

Material. The basis of the material employed is wood-pulp, made preferably from the crushed fiber of the poplar tree. This is rolled into sheets in such wise that the fibers intertwine in every direction, and loosely, thus giving an increased ductility to the product. These sheets are further strengthened by having a fabric introduced between the layers of the pulp, or by interweaving with the short, crushed wood-fibers, a long jute, or other tough fiber.

These sheets are made of several thicknesses; for convenience I shall designate them by number, each figure representing one millimeter. Thus, sheet 1 has a thickness of one millimeter, sheet 2, of two millimeters, and so on.

The characteristics of this material are stiffness or rigidity when dry, and plasticity with toughness when moist. Its rigidity can be increased *ad libitum* by the use of a silicate solution as a moistener.

Splints for irregular surfaces. A splint cannot be directly moulded over the ankle-joint, owing to the great irregularity of that part. This difficulty can be overcome in several ways. The anterior splint should be cut from sheet No. 1, and applied, after moistening, to the limb, care being taken to keep the outer border in contact with the skin and the superfluous material pinched up between the thumb and forefinger. A bandage should be applied to perfect the moulding of the splint. Again, it is possible to cut away the superfluous material, bring the edges together, and retain them there by a strip of material over the cut edges.

Moisteners. Water, or a stiffening solution, can be used to moisten the material previous to molding. The advantage of water is its omnipresence. With its aid a serviceable splint can be made. Such a splint, however, is liable to be softened by the absorption of perspiration, or, on children, of urine; and for this reason it should be protected by a covering of oiled paper silk, mackintosh, or, best of all, by a coat of varnish. A solution of potassium silicate has several qualities that render it the best of the stiffening solutions experimented with. Any desired degree of rigidity up to brittleness can be given the splint by using a silicate solution as a moistener—the stronger the solution the more rigid the splint. A splint rendered rigid in this wise is not affected by perspiration, nor, indeed, by momentary contact with fluids, as in washing. Another quality, of exceptional advantages in cases of compound fractures is that this solution has strong antiseptic properties. The manner of moistening deserves mention. It is most satisfactorily done by means of a flat paste-brush, applying the fluid used on both sides alternately of the splints, and repeating until the proper amount of fluid is absorbed. Practice enables us to judge the precise amount of moisture suitable for our purpose.

A splint for the spinal column should be cut from sheet No. 1, moistened with the solution of potassium salicylate, and passed once and a quarter times around the patient's body. The position of the patient should be like that when a plaster jacket is used. A sheet wrapped around facilitates the adherence of the splint, the material whereof should be pressed into the hollow of the back.

A light and excellent splint for the forearm, and such as retains the bone in position with ease, is made with this material. A palmar forearm splint is sufficient in most cases.

In the discussion that followed, DR. WAKLEY, of Malone, N. Y., observed that new paper-pulp, which acted like the wood-pulp used by Dr. Tracey, was inferior in this respect, that it could not be folded and bent about sharp angles.

DR. SAYRE, of New York, stated that the splint was very light and very nice, and for many cases very useful, but he would not think the material suitable for spinal supports, because of bending and puckering in of the material when it was wet to fit it to the body. It does not make the exact fitting necessary to give good support to the spine. The fault he has found with all materials he had tried is that while wet they were not sufficiently pliable and elastic to adapt themselves to irregular outlines, and the fit was consequently only approximate. In many cases it is not necessary to have a very good fit, and for such purposes this material is very useful.

DR. MCLEAN, of Detroit, had for years been accustomed to extemporize splints out of folded newspapers, which he had found very useful and always to be had in cases of emergency. He noticed Dr. Tracey passed around a forearm splint, which appeared to be for use in Colles' fracture, and he personally thought that too prolonged retention of splints in this fracture and the extension of the splint too far down upon the hand were detrimental and tended to the production of stiff wrist and fingers afterward, which he thought was to be attributed rather to the splint than to the injury of the bone.

SECOND DAY—SEPTEMBER 6TH.

Morning Session.

DR. JOHNSON read a paper on "Simplicity in Surgery," in which he inveighed against the practice, too frequent nowadays, of adding new and not very useful

details to the already complicated procedure of surgical operations. He would abandon nothing of real utility, but would strip operations of all "useless and cumbersome frills." He contended that simple aseptic means were the best, such as the use of boiling water for disinfecting instruments, provided the boiling went on for a sufficient time; the use of gauze dipped in a corrosive sublimate solution and wrung out, and attention to the ordinary rules of cleanliness. The older and simpler sutures have kept their place. And for hemorrhage, the Esmarch band has proved the most effectual control.

DR. HAINES, of New York, then read a paper on the "Study of Anatomy of the Thoracic Organs by Means of Composite Photography." He had photographed a large series of cadavers, after making certain dissections, and had made composite photographs of these dissections, and taken careful measurements of the relations which the parts bear one to another. He found that a good many of the statements in some of our standard text-books were at variance with the results which he obtained by this process. In many instances the statements in the present text-books are very vague and unreliable, and the points from which measurements are given are so indefinitely stated that no accuracy can be had in determining the exact location of the parts. The paper had particular reference to the location of the heart.

"Observations on the Rotary Lateral Curvature of the Spine, with Special Reference to Etiology and Treatment," was a paper read by DR. TESCHNER, of New York City. The best results are obtained by early treatment. The disease is more common in girls than boys.

Factors in the etiology of the disease, which are to be regarded as of special importance: Hereditary tendency; general temperament, and the condition of the mind and nervous systems; lack of development of the muscular system and general physical condition.

As to the first, frequently I find decided scoliosis in the mothers of girls brought to me for treatment.

Secondly, most girls afflicted are of an apathetic, morose, and lazy disposition, disinclined to play, and commonly silly and staring in expression. There is a lack of coördinating power, which disappears on treatment. If the wrist is extended the elbow is usually flexed. In addition, the muscles are poorly developed, the digestion weak.

An habitual faulty position of the body, such as resting on one foot, or sitting on one buttock, with the shoulders bent forward, so that there is a sagging of the whole body, may lead to a permanent distortion, by causing actual bony and ligamentous changes. Long school hours are a cause.

Treatment. Removal of the causes. Deformities should be mitigated. Frequent baths, and tonics if necessary, with careful regimen were advocated. The patient should be placed in a proper manner, in a chair reaching to the shoulders and supporting the back, with the foot touching the floor. Frequent lying down, with the legs extended and arms fully stretched out, is to be recommended as well as self-suspension twice a day.

Lower habitual scoliases can be obliterated by voluntary muscular effort. No support like a corset should be permitted.

Again, there are scolioses that, unaffected by muscular effort, can be reduced or obliterated by suspension of the patient. In these cases I adopt light and well-cemented plaster-of Paris corsets, while the patients are suspended. As to scolioses when the deformities are fixed, I make use of forcible daily twisting of the spine in compression of the ribs by means of an apparatus described by D. A. Hoffer, of Würzburg.

In the discussion, DR. SCHNAPPS, of Brooklyn, said he thought that cases of lateral curvature required no mechanical support, and that teaching the patients to rely upon their own muscles to hold their bodies upright was very necessary, and that artificial props tended to diminish the power of the muscle by constricting it.

DR. TESCHNER replied that some cases required and some cases did not require artificial support, and that when he can get along without this support he does not employ it, but in some cases it is necessary to use it until the patient develops sufficient muscular power to be able to voluntarily keep the body upright. In many cases they are not able to do this.

DR. GRAHAM, of Chicago, read a paper on "Carbuncles." After an exhaustive review of the subject of carbuncles, Dr. Graham spoke of the methods of treatment. He thought that often subcutaneous suppurative inflammations were called carbuncles, when they were only abscesses. The true carbuncle is necessarily limited in its extent and duration. Palliative means he considers useful if nothing more can be done. Caustics, incisions, etc., are recommended, but he advised the total extirpation of the indurated mass as a tumor would be extirpated. The extirpation should be done early, and the incision should extend just beyond the borders of the induration.

Afternoon Session.

A paper on "Recumbency in the Treatment of Pott's Disease" was read by Dr. JOHN C. SCHNAPPS, of Brooklyn, N. Y.

It is not alone the collapse of a cavity produced by disintegration which is the local determining condition of the deformity of Pott's disease. The softened bone which surrounds for some distance and merges into the seat of actual destruction is squeezed out by longitudinal pressure, bent out by antero-posterior leverage, and pushed out by direct backward pressure. To directly antagonize these deforming forces it is necessary to have a passive spine. Portative apparatuses are limited in their efficiency by reason of the distance and heterogeneous character and mobility of the parts which intervene between their points of application and the lesion sought to be controlled, and are usually applied with a view to maintaining the activity of the spine as a support and a base for muscular exertion. Recumbency means more than simply putting a patient to bed. It implies the retention of the whole spine in the best possible position so that the separate parts remain unchanged or subject to such changes only as the surgeon may make. When the patient is horizontal, the force of gravity which had acted when upright as a deforming agent can be converted into a reforming force. Direct backward pressure can be accurately antagonized. Muscular action and consequent interosseous pressure, now greatly reduced by the general condition of rest, can be overcome by fixation and by less traction than would be required to raise the weight of what were superincumbent parts.

The spine, thus relieved of the performance of all its active functions, and saved from all traumatisms, is placed in the best possible condition for repair. And, what is of great importance, fever and the drain of muscular spasm, pain, and perverted nutrition are met by a state of systemic rest. Clinical experience has demonstrated the truth of these theoretic considerations. The indications for recumbency are: (1) As a routine measure, so soon as a diagnosis of spondylitis has been made or is even probable. (2) In cases of patients wearing braces, with persistent sores, progressive deformity, psoas contraction, acute or increasing abscess, loss of power, pain, night-cries, grunting respiration, inclination to lean on chairs, etc., or any other suggestion by face, attitude, or gait that the proper degree of support has not been secured.

DR. FRANK, of Chicago, read a paper on "Tapping of the Ventricles of the Brain for the Relief of Intra-cranial Pressure." He indicated the methods by which the ventricles of the brain can be reached through the brain, and emptied, for the purpose of relieving these cavities of the products of inflammation, and the brain from the effects of the compression due to the accumulation of abnormal fluids. Under favorable conditions the operation might be done with fair prospect of success.

In the ensuing discussion, DR. GRAHAM, of Chicago, said: The position Dr. Frank takes, I understand, is that all cases of traumatism, or all cases of inflammatory conditions of the brain with one side paralyzed, should be tapped. I think it perfectly proper in cases of paralysis following traumatism to tap the lateral ventricle. In inflammations of the brain, if we suspect abscess, the case is not properly treated by stopping at the dura. We should tap the cavity.

PROF. LAVISTA (in Spanish) expressed general admiration of the presentation of the subject by Dr. Frank. He has come to the practical conclusion that, instead of simply trephining, or simply tapping the ventricle, it would simply be better to perform craniectomy, which would be more conducive to a permanent cure. The removal of the larger section involved is a more permanent way than the other methods suggested.

DR. MARIAN, of Pueblo, Mexico, read a paper on "Suture of the Brachiocephalic Vein, with Report of a Case." The author uses deep interrupted sutures, made of fine catgut, and in the case reported there was no sign of thrombosis or interrupted venous circulation. Last July the author was called to see a man aged fifty-one years, upon whom it was necessary to perform an operation which involved an important vein. Two sutures were passed with a fine needle. Recovery followed.

In the discussion DR. MARCY, of Boston, said the paper just read points to a distinct advance in surgery. Comparatively little has been known of the possibility of suturing veins. I have had but one opportunity, and that was suturing the right jugular in removing a cancerous growth. The operation was performed this year. It seems to me that a continuous Lembert suture would be valuable in these cases, if care is taken not to puncture it. It is surprising how little force is required to control the hemorrhage, and the less pressure necessary to stop the bleeding the better.

DR. LAPLACE, of Philadelphia, read a paper on "Gastrostomy for Relief of Esophageal Stricture." After describing a successful case, he proceeded:

The second case, thirty-two years of age, had lost the power of deglutition; otherwise he was well. There was a stricture of the esophagus. An operation was made, requiring two separate sittings. Food was introduced into the stomach through the opening. It then occurred to me that I might introduce the sound through the stomach up the cardiac extremity; I think it could be introduced through the stomach into the esophagus.

THIRD DAY, SEPTEMBER 7TH.

PROF. WOLFE, of Glasgow, Scotland (Royal Infirmary), demonstrated the transplantation of flaps from the conjunctiva of the rabbit to the human subject. After carefully dissecting the flaps from the conjunctiva he grafted the skin on the back of his hand. It was claimed that these are especially adapted to burns.

The transplanting of skin flaps from distant parts was postponed.

DR. MARCY, of Boston, read a paper entitled "In What Class of Cases is Drainage Required?"

A discussion followed, in which Dr. Marcy's opinion that drainage-tubes ought not to be used in aseptic wounds was supported by several gentlemen, among whom were Drs. Quimby, Prewitt, McCosh, and Laplace. Dr. Marcy concluded the discussion with the remark that "the great secret of the cure in hernia is to operate so as not to use drainage."

SECTION ON OBSTETRICS.

FIRST DAY—SEPTEMBER 5TH.

DR. JOHN O. POLAK, of New York, presented a paper on "The Management of the Hemorrhages of Pregnancy." The hemorrhages occurring ante-partum are 1, bleeding as a symptom of miscarriages; 2, placenta prævia; 3, accidental hemorrhage from the partial separation of a normally-placed placenta and ectopic gestation.

Hemorrhage as a sign of miscarriage, when very slight, may be controlled by rest in bed, suppositories of morphia and atropia, ʒj. doses fld. ext. of viburnum, or gr. iv. pill of solid extract. In more severe cases with abortion inevitable, cervical softening, dilatation, and the ovum separated, everything being aseptic, the cervical and vaginal tampon is to be recommended, to empty the uterus and secure firm retraction.

Through a Sims speculum with anterior lip of cervix fixed, carry strips of iodoform gauze into the cervical canal through the internal os, then pack anteriorly, posteriorly, laterally, and finally against the cervix, filling the whole vagina with gauze.

Clinically a prævia is where the placenta has an attachment in the lower zone and the cervix, from which it is detached during canalization. Before viability, the diagnosis made, with the fetus dead and implantation central, with hemorrhage, the indication is to empty the uterus. After viability, act with the occurrence of the first hemorrhage. It is not good obstetrics to allow the patient's strength to become exhausted by repeated or continued bleeding, not to speak of the nervous strain she sustains. Hemorrhage occurring and with the cervix closed we should tampon with iodoform gauze at the

end of eight to ten hours, and when the gauze is removed douche with an antiseptic. The cervix in most cases will admit one or two fingers. With this amount of dilatation turn by the Braxton-Hicks method, and bring down a foot, which acts as a most efficient tampon. This method, in my opinion, is superior to either the method of Barnes or the use of internal version.

In accidental hemorrhage from partial separation of a normally-placed placenta, rapid dilatation of the cervix is indicated manually, or if the portio vaginalis be effaced, the bloody method; then rupture the membranes, and deliver rapidly either by forceps or version. Remove the placenta immediately and tampon the uterus with iodoform gauze to control bleeding. Craniotomy may be resorted to if the fetus be dead or non-viable.

I condemn ergot in these cases before delivery, as it causes spasmodic action and tendency to the formation of stricture at lower segment.

PROF. MANUEL GUTERIER read a paper (in Spanish) entitled "A Comparison Between the American and European Pelves. Practical Consequences from the Peculiar Mexican Pelvis."

SARAH H. STEVENSON, M.D., of Chicago, contributed an article entitled "A Study of Placenta Prævia, Especially the Causes of Hemorrhages."

DR. HUGH HAMILTON, of Harrisburg, read a contribution entitled "The Application of Graphics to the Fetal Heart Sounds," with a demonstration of the method advised and a consideration of its practical application in doubtful pregnancy.

In the discussion that followed DR. DE SAUSSURE, of South Carolina, asked the gentleman who read the paper on the Mexican pelvis if there have been any observations made in regard to the forms of the heads.

In answer DR. MANUEL GUTERIER said there is no corresponding deformity between the Mexican head and that of other nations, although there may be in the Mexican pelvis. The diameters of the head are of the usual dimensions. I would like to emphasize the fact that dimensions of the pelvis and the forms of the soft parts are peculiar to the Mexican pelvis, but there is nothing peculiar in the diameters of the fetal heads.

DR. DE SAUSSURE, of South Carolina, asked Dr. Stevenson if the hemorrhage of placenta prævia comes from veins.

DR. STEVENSON, of Chicago: I think we frequently have arterial hemorrhage, and I stated in my paper one case where it was almost direct. When the placenta is high, the uterine artery runs a very tortuous course, and when the placenta is placed low the arterial supply is almost direct from the uterus. There is one question I should like to ask Dr. Polak regarding the use of iodoform to any great extent, and if so used whether it does not cause iodoform poison.

DR. POLAK, of New York: My use of iodoform has been quite large; I have employed it in sixty-eight cases of hemorrhage. In six of these I have left over one-half dram, nearly sixty grains, of iodoform, and there was no absorption to cause any iodoform poison. The iodoform in those cases does not act directly, but is dissolved and simply acts as an antiseptic. It had really no direct effect, acting simply to keep the discharges back.

DR. HARRIS, of New Jersey, asked to what extent arterial depletion of the mother by loss of blood may not cause fetal asphyxia, or whether such cases occur when there has not been arterial depletion of the mother. We have reason to believe that in cases of placenta prævia this is a very considerable factor in increasing the death-rate of children as well as to render them more likely to be stillborn.

DR. STEVENSON, of Chicago, thought that in fetal asphyxia the heart-beats would be accelerated at first, and would be retarded at the close. At death, heart-beats would occur more slowly. Axphyxia is certainly a lack of blood-supply to the nerves of the child. That at first would cause acceleration. The action of the poison around the heart would be certain to produce very rapid action, and at the close retard it.

DR. HARRIS, of New Jersey, asked to what extent incisions have been made in the cervix to facilitate labor.

DR. POLAK, New York, in reply said that the operation of incising is recommended by Dührssen. In the speaker's experience it has proved to be very successful.

DR. DEWEES, said that in his case he had used the lancet and chloroform, and that at this stage chloroform had always resulted in post-partum hemorrhage. I have been teaching that chloroform is not to be used until the head is through the os. If the patient drops off to sleep and the pains come on with strong regularity, in those cases in which we need immediate delivery in the interest of the mother and child, I think it is well to use the lancet.

DR. DEWEES, of Kansas, said that the cases in which he used chloroform are entirely different from those in which the lancet is used. I use the lancet when it is necessary to produce quick delivery. Chloroform produces an easy delivery, and there is no danger when the pains and contractions are strong and active and the patient in a healthy condition. Under these conditions I have given quite large doses. You will be surprised what good results it will bring immediately.

SECOND DAY.—SEPTEMBER 6, 1893.

"The Status of Obstetrics in General Practice," was the subject of the paper by DR. ELIZA H. ROOT, of Chicago. She asked why child-bearing is so often followed by health-ruining results.

The conditions which prompt the patient to seek advice of the gynecologist belong to one of two classes of causes or to both combined. I. Traumatisms. II. Inflammations, due largely to septic infection at or during the lying-in period.

The causes which produce the conditions may be traced to ignorant and careless practice; (*a*) of the accoucheur, physician, or midwife, or of the patient herself, or in the care of the lying-in patient. The physician assumes the responsibility of the lying-in chamber without sufficient clinical training and experience. Carelessness and ignorance on the part of the patient frequently put the skill of the physician to a severe test. The physician will know nothing of a case of nephritis with albuminuria until called to a case of eclampsia, that with treatment and care might have been avoided. Constipation during gestation is a frequent source of danger to the lying-in period. A case proved to me how serious the consequences when the ignorance of the patient is combined with the ignorance and careless-

ness of the physician. It is the physician's duty to teach his patients the importance of seeking timely advice and to duly warn them of the consequences of not doing so; for in no branch of medicine will an accident or fatal outcome prove more disastrous to the physician. The surroundings and the nursing of the patient should not be left out of the physician's code of duty. The practice of paying one visit after delivery that prevails in some parts of our country is reprehensible.

DR. J. H. CHESTNUT, of Philadelphia, next considered the question of "The Induction of Premature Labor." The groups of cases whose circumstances may call for the operation for the induction of premature labor include: First, cases of contracted pelves which would render labor at term dangerously difficult to the mother, to the child, or to both; second, cases of maternal disease which progressively endanger the life of the mother; third, cases in which in previous pregnancies the child has died in the latter weeks of gestation; fourth, cases of hopeless disease of the mother, for the sake of the child; fifth, cases in which the child is known to be dead; and, sixth, cases complicated by the presence of ovarian, bony or malignant tumors, or by atresia of any part of the normally distensible canal.

The relative number of markedly contracted deformed pelves is very small; in a private obstetrical practice of more than twenty years the writer had met but one case with a conjugate diameter at the brim of less than two and one-half inches; but cases of lesser contraction where the same diameter measured from three to three and three-fourths inches, or where there appeared to be a slight degree of lessening in all diameters, were not so uncommon.

The writer believes that in cases of deformed pelves where the antero-posterior diameter at the brim is from two and three-fourths inches to three and one-fourth inches, and in cases of justo-minor pelves, where the same diameter is three and one-half inches—labor should be induced before term, when the conditions described are recognized in due time. The difficulty of diagnosis at the proper time is the obstacle to the more frequent employment of the operation in these cases.

DR. A. J. C. SAUNIER, of Chicago, next read a paper on "Aids to Easy Parturition."

Aids to easy parturition should be considered and their application begun early in life. Care is to be exercised in young women at the time of menstruation to prevent undue congestion and to secure free catamenial flow. After impregnation, diet may influence the amount of suffering undergone at the time of childbirth. All pelvic troubles, especially inflammations, should be corrected during the period of gestation, and we should abridge the first stage of labor by securing frequent and strong uterine contractions, by means of massage of the abdomen and digital assistance in dilatation of the os uteri.

In the ensuing discussion, DR. STEVENSON, of Chicago, said he should like to reinforce the arguments and statements of Dr. Root as to the number of so-called obstetricians and midwives in this country. The facts which were so well brought out in her paper, that obstetricians and midwives are not supervised here as they are in the old country, and the harm done to obstetrical science in this country by midwifery, presents a very grave question. I think this body ought to take some measures to prevent the spread of incompetent midwifery among us. There are two things essential for the good of obstetrics: First a *good* obstetrician, and second, a thoroughly well trained nurse. It occurs to me that as an authoritative body we should at least use our influence against the licensing of careless or incompetent midwives.

DR. UPSHUR, of Richmond, Va., said that one of the trying evils of this day is carelessness in the attention of midwifery cases. I try to emphasize with my own patients the need of an early engagement for attendance, and I try to obtain as thoroughly as possible all information. I make it a matter of conscience to visit the patient repeatedly, and soon after the engagement obtain knowledge of all previous conditions—whether the patient has been a subject of dysmenorrheal trouble or not; as to her general health; profuse flow at the time of menstrual period; the patient's general habits, sleep, exercise, conditions of physical trouble, constipation, etc. I believe the secret of safely bringing forth the child is the attention paid to the mother. I am satisfied that the man who fails to watch carefully the condition of the kidneys, the existence of albuminuria, or of any small puffiness of the hands or feet, which would lead to trouble, or a tendency to persistent headache and wakefulness, will sometimes lose an excellent opportunity to prevent trouble when labor comes on. I agree very fully with Dr. Root as to the value of cleanliness. The patient should not receive visitors until she is in such condition as to admit of this without being fatigued. I am sorry to say that a large number of nurses are negroes, and they have certain ideas in regard to the management of the child which are hard to overcome, and very often with the utmost care the physician will find that something has been done to the detriment of the patient without his knowledge. It requires the utmost care and the most rigid scrutiny to see that our instructions are carried out. If this is not done, these meddlesome women practice their methods, and the patient will probably have to go through the rest of her life an invalid in consequence.

I had a case where a midwife used a large syringe upon every patient, producing septicemia and bad lacerations. Such treatment ought to be met with a term in the penitentiary. Any woman applying for a license for midwifery may get it for a small fee. This ought not to be encouraged. Often we are called to undo the ills which follow in the train of these meddlesome, inefficient midwives.

Dr. H. HAMILTON moved that a resolution be passed to take some measures toward improvements in midwifery in this country.

The Chairman appointed as a committee to take charge of the matter, Drs. Root, Upshur, Chestnut, Stevenson, and Guterier.

Dr. GUTERIER, of Mexico, continuing the discussion, said that in Mexico it was proposed that there should be a requirement of two years' preliminary education, and then three years of more technical education, requiring in all, a five-year term for educatien.

"The Mechanism of Labor," by JACOB CHASE RUTHERFORD, M.D., of Providence, R. I., was the next paper read.

The theory of the mechanism of labor, as advanced by all ancient and many modern obstetrical writers, is entirely without foundation. The ground taken that the parturient canal is curved cannot be maintained for a moment when we consider the anatomy of the parts, the changes that take place during pregnancy and the phenomena of labor. . . . The mechanism of labor, briefly, is as follows: In head presentations, occipito-anterior, the head descends in the axis of the uterus in a straight line, until it reaches the trough of the levator-ani muscle, when rotation begins; continuing to descend in the same line, it reaches the bottom of the trough, which is the floor of the pelvis. By this time rotation is completed, and now begins the hardest part of the labor, for the head having reached the floor of the pelvis, cannot go any further, but must change its direction and pursue a course at right angles with the one it has been following. This change in direction is brought about by extension of the head into the vaginal canal. As the head extends, the body descends, and by the time the head is fully extended it has passed the vaginal orifice, and the shoulders are at the utero-vaginal angle. They pass the angle by a lateral bending of the body and are followed by the hips and legs.

In occipito-posterior cases, labor is prolonged by the impossibility of further flexing an already fully flexed head, and the perineum has to be enormously distended before the head can be delivered.

In face-cases mento-posterior delivery is impossible because the head cannot be further extended, and the stiff, straight fetal body cannot be bent around the angle. A knowledge of the mechanism of head-cases embraces a knowledge of the mechanism of other presentations.

The deductions to be drawn from the above theory are: first, the parturient canal is angular, not curved; second, when the presenting part has reached the bottom of the trough in the pelvic floor, rotation is quite complete; third, flexion and extension take place at the utero-vaginal angle; fourth, in the high forceps delivery traction should be made in the line of the uterine axis, and in the low forceps, delivery in the line of the vaginal axis.

"Obstetrics Among Negroes of South Carolina," was an interesting communication by DR. P. GOURDIN DE SAUSSURE, of Charleston. The negress differs from her white sister. I found the average weight of 57 female children at birth to be 7.50 pounds (48 boys, 8.25). Menstrual life begins earlier. From several hundred observations I estimate it to be about the thirteenth year. Thirty-three cases, where the age was certainly fixed, gave 13.10 as the average; this is a full year earlier than Emmet's "average menstrual age," 14.28. A possible explanation of this precocity may be the early use of the sexual apparatus. The childbearing period is longer with the negro than the white, for the average age at the menopause is about 49. In 43 cases, where the age could be proved, I found it to be 48.6; more extended observations, I believe, would give us 49+, for I have delivered several who claimed to be over 52; and in a midwife's book I found records of three delivered at 53. On this point the following figures speak: 19 primiparæ gave us an average age of 18.2, and 7 multiparæ having twelve or more children each had an average age of 38.8.

As to the menstrual flow its duration was 4.2 days in 53 observations; the amount, however, is less than in the whites. As a rule, the negro is remarkably free from menstrual irregularities. Amenorrhea, dysmenorrhea, and menorrhagia are rare amongst them, and when found are almost always due to anatomical defects or lesions. The mulatto is an exception to this rule. The negro is more fruitful than the white—that is, their families are larger; 107 observations on this point give us 5.8 children to each. Of the 107, 19 were primiparæ and 7 multiparæ, with 12 or more full-term pregnancies. The ratio of twins was in 14,320 colored births, 9.63 per thousand, and in 7140 white births, 9.52 per thousand.

The negro is very free from the diseases of pregnancy. I have in eighteen years never seen a case of hyperemesis, icterus, or chorea; eclampsia seems to be an exception, and in the last five years has become more frequent. In 11,074 colored pregnancies I found 47 deaths from eclampsia, while in 6044 white pregnancies I found 19 deaths from the same cause. Estimating one death to two recoveries, I find that the ratio of cases to pregnancies is more than 1 to 500, Galabin's and Kleinwacher's estimate, but not much over Parvin's, 1 to 300. As the negro does not take into consideration an abortion occurring before the fourth month, it is hard to speak on this subject. In 37 patients I found but 3 who had not aborted, and the other 34 had had between them 80. In five years there were reported to the board of health 251 abortions in negroes, and only 84 in whites. These figures do not show the hundreds of abortions of an earlier date than the fourth month. Causes of abortions are chiefly syphilis, from which 75 per cent. of the Africans of Charleston suffer either by inheritance or acquisition. Other causes are medicines taken for the purpose of producing the result.

Labor in the negro is a simple act begun and finished without fear. The nervous disturbances so common in the whites are never seen in the negro. Their labors are shorter; the average duration, in primiparæ, in 13 cases was 6.9 hours; in 8 multiparæ, 2.15; but aside from looking on the act as a purely physiological one there is this fact to be borne in mind: the African pelvis is larger. These measurements, external pelvimetry, speak for themselves—17 cases:

Circumference	92
Between spines, antero-superior	26
" widest parts	29
" trochanters	33
External conjugate	21

The negro is very free from puerperal fever or septicemia. In 14,600 pregnancies, 14,358 at term, I found but 57 deaths from puerperal diseases, and this amongst a race that has not an idea of cleanliness.

"Uterine Compression," by DR. JOSÉ MARIA DE ITA, of Pueblo, Mexico, was the next communication:

The author, who for the last ten years has been in charge of the Maternity Hospital of the city of Pueblo, gives credit to Dr. Juan Maria Rodriguez for having first introduced and practised uterine compression in Mexico. He is perfectly satisfied of its great utility as an aid in the production of uterine contraction. He practises the operation in the following manner:

The woman lies flat on her back, the operator stands by her side, extends his arms, and presses the hands

with the two thumbs together over the abdomen immediately above the fundus uteri; at first only slight digital compression is made, slowly increasing the force, imitating the rhythmical contraction of the uterus. It is necessary sometimes, he says, to continue the pressure steadily in order to terminate the delivery at once.

The indications for uterine compression he groups thus: 1. In all cases of uterine inertia. 2. To help the traction made with the forceps. 3. To expel the trunk when the head of the child has already been born, either by Nature's forces or by traction; in this last event, with the uterine compression one avoids the necessity for further traction on the head, or inserting the finger in the axilla to draw out the rest of the body. 4. To hold the head bent after the expulsion of the trunk, and thus helping to its birth, in a case of feet-presentation. 5. To overcome the resistance of the perineum and avoid the application of forceps. 6. To fix the head in the superior strait in cases when the application of delivery forceps are necessary, or when the use of craniotomy forceps become a necessity. 7. To facilitate the expulsion of the placenta in cases of hemorrhage. 8. To aid the utetus in throwing out the clots retained in its cavity, should a secondary hemorrhage take place.

The author says that in case the uterus loses the power to contract, this mechanical compression will take its place.

When the accoucheur has no assistant with him, he ought to practice the operation with only one hand aided by the forearm, and the other hand used to support the perineum.

"A Method of Performing Rapid Manual Dilatation of the Os Uteri, and Its Advantages in the Treatment of Placenta Prævia," by PHILANDER A. HARRIS, M.D., of Paterson, N. J., was read by the author. A history of eight successful cases was given embracing the author's entire experience in the management of placenta prævia. The method of dilatation was shown, and is to be illustrated in a published report by the aid of ten photo-engravings. The undilated os in placenta prævia, can, under chloroform or ether anesthesia, be enlarged to a circumference of ten to eleven inches in from fifteen to twenty-five minutes; thus rendering it easily possible to effect rapid delivery of child without waiting for the development of labor, or of employing more tardy and inefficient methods of dilatation to any degree desired by the operator.

In the discussion, DR. BRIGGS, of New York, said: Dr. Harris's theory is, I think, the best way in which we can treat placenta prævia. As soon as we can in any way dilate the cervix we ought to do so, because in that way we save many lives. That was made clear years ago by Hirsch. Referring to the rings which the doctor has presented, I would say that they are certainly a very ingenious device. Now everybody knows that we have greater strength in our flexor muscles than in any other muscles. Admitting all this, there is only one thing which might be a little adverse. These springs are composed of a series of rings, which are rather sharp.

DR. HARRIS: These coils represent the os uteri. There is nothing but the hand employed in this operation.

DR. BRIGGS: I think it is an excellent way of dilating the cervix.

DR. HARRIS: I am a little sorry that some of the doctors present did not bring up the Braxton Hicks method.

THIRD DAY—SEPTEMBER 7TH.

"Recent Surgical Advances and their Relation to Conservative Obstetrics," by DR. W. REYNOLDS WILSON, of Philadelphia, was then presented. In view of the fact that the science of obstetrics is the most stable of medical sciences in which fixed mechanical laws largely determine both the event and the conduct of parturition, the influence of modern surgery modifying obstetrical practice is unexpected. This influence is observed in the present treatment of abortion, ectopic gestation, dystocia, in contracted and deformed pelves, and septicemia.

The operations which have become recognized obstetrical procedures in these conditions are: in abortion, curetting in order to remove every trace of decidual tissue, irrespective of symptoms of retention; in ectopic gestation, the removal of the gestation sac as soon as the diagnosis has been established, irrespective of the viability of the fetus; in impeded labor, Cæsarean section and symphysiotomy; in septic infection, curetting and drainage, by means of gauze; celiotomy for peritonitis, and supra-vaginal hysterectomy for lymphatic infection of the mucosa.

Surgery deserves the lasting praise of the profession for the scientific treatment of tubal pregnancy, no surgical procedure being too radical for this condition, but of all these procedures the active treatment in abortion and in septicemia and the substitution of symphysiotomy for the forms of treatment formerly recognized in dystocia from contracted pelvis, are to be questioned.

DR. HENRY J. GARRIGUES, of New York, read a paper on "Symphysiotomy." When the symphysis and subjective ligaments are cut, the limbs bent, and the iliac bones pulled apart, a separation of 7 cm. (two and three-quarter inches) between the ends of the pubic bones is easily obtained without injury to the ilio-sacral joints. The head enters into this gap, and all diameters of the pelvis are considerably increased. The distance between the center of the promontory and the end of the pubic bones, at the safe distance of 7 cm. (two and three-quarter inches), gains 14 mm. (over one-half inch), the other diameters from 17 to 35 mm. (three-quarters to one and one-half inches).

Symphysiotomy is indicated in a flat pelvis with a true conjugate ranging between 67 and 88 mm. (two and five-eighths to three and one-half inches), but it is difficult below 7 cm. (two and three-quarter inches). In a generally contracted pelvis the upper limit may be extended to 10 cm. (four inches), and we should cautiously approach the lower limit. Other indications, with which it has been performed, are pelvic tumor, mento-posterior face presentations, if the chin cannot be rotated forward, occipito-posterior vertex presentation with impacted head; and it has been proposed in cases of absolute coarctation of the pelvis (*i. e.*, below 5 cm.—two inches) with dead child, in order to facilitate craniotomy and embryotomy. The sacro-iliac articulations must be movable. There are two chief methods—the subcu-

taneous (Morisani's) and the open (Pinard's). The child may be left to be expelled by uterine contractions, or removed with forceps, or turned and extracted. Considerable lesions of soft parts have occurred even in the hands of first-class operators. In many cases the hemorrhage has been profuse and sometimes difficult to check. Most children are more or less asphyctic, and in some there has been fracture of the skull. In lying-in hospitals and private practice of specialists it should take the place of craniotomy on the living child and induction of premature labor, in which the infantile mortality is over 43 per cent.

Cæsarean section should be limited to cases that lie beyond the domain of symphysiotomy. Symphysiotomy has several times been successfully performed twice on the same woman.

Dr. John P. Upshur, of Richmond, Va., next discussed "The Therapeutic Application of Chloroform in Labor."

"Induction of Labor and Accouchement Forcé in the Prophylaxis of Eclampsia," by Dr. Charles Jewett, of Brooklyn, N. Y., was the next paper read.

Whatever room there may be for difference of opinion with reference to the etiology of child-bed eclampsia and the nephritis of pregnancy, it is impossible to lose sight of the fact that the ultimate cause of the trouble is the presence of the child *in utero*. So long as the cause remains, our resources either for the treatment or prevention of puerperal convulsions are at most an uncertain reliance, and too often prove wholly futile. A pregnancy-nephritis once established, the kidneys never regain their normal condition while the pregnancy continues. Dietetic, diaphoretic, and cathartic measures are of great value as temporary expedients, but they do not cure.

The extra tax upon the crippled kidneys increases rapidly in the later weeks of gestation, and the danger grows with the growth of the child. The woman is never free from the possibility of a sudden explosion of uremic symptoms. On the occurrence of convulsions the gravity of the condition is enormously increased, and with each succeeding attack it becomes less and less amenable to treatment. After labor, on the other hand, the nephritic symptoms subside, and prompt recovery is the rule. Convulsions in most cases cease with the birth; the attacks seldom begin the post-partum period, and in any event they yield more easily to ordinary remedial measures in the puerperal than in the pregnant or parturient woman.

The chief desideratum, therefore, in the prophylaxis of puerperal eclampsia is the evacuation of the uterus. The writer believed that under modern methods a more aggressive policy is justifiable in the prevention of eclampsia than is generally pursued. It is difficult to formulate definite rules, but in general after the full period of viability little reliance should be placed on other than obstetric measures. In the presence of any but the milder forms of nephritis, immediate and rapid termination of the pregnancy offers the best prospect for both mother and child. The indication is especially urgent in the last month of gestation, when the child has little to gain and the mother frequently much to lose by delay.

Under the methods formerly employed the induction of labor was a difficult and tedious undertaking. With the intra-uterine injection of glycerin, recently introduced by Pelzer, uterine contractions may be set up at will and the birth terminated with rapidity and safety.

Labor begins immediately, as a rule, and is actively established within two hours. The intra-uterine injection of glycerin acts not only to inaugurate the pains, but in greater or less degree to maintain them. Its effect in many cases seems to persist to the close of the third stage if well retained. To act at best advantage the glycerin must be carried high up toward the fundus, must be widely diffused between the membranes and the uterine wall by gradual injection, and its too rapid escape prevented by keeping the patient in the latero-prone position. In many cases no further interference is called for. In imminent danger of convulsions, if the labor is not promptly terminated, it should be completed by manual dilatation of the cervix under chloroform, and resort to forceps or version. Under a rigid asepsis, and with avoidance of lacerations, accouchement forcé is a safe and conservative procedure. Manual dilatation should not be undertaken before the supra-vaginal portion of the cervix is obliterated. In simple cases it is a harmless interference which may save hours of labor and continued danger. In difficult cases with a rigid cervix the operation is even more urgently indicated and is safe, provided sufficient care is used. From ten minutes to two hours will usually suffice to complete the dilatation and terminate the birth. The total length of labor will seldom exceed twelve hours; in emergency, may be reduced to five or six.

The last paper read was entitled "Contributions to the Study of Puerperal Septicemia," by Dr. Antonio Jose Amadeo, of Maunabo, Porto Rico. It was a résumé of the twenty years of obstetrical experience of the author in the town of Maunabo, island of Porto Rico. He says that until lately a physician was there very seldom called to attend a case of confinement, and that puerperal infection is much more frequent in the towns, on account of bad hygienic conditions, than in the country. He holds the opinion that women of a lymphatic temperament are more liable; chronic metritis and leucorrhea are also contributing factors; anemia, and all the manifestations of lymphatic cachexia are unfavorable signs of the prognosis.

In regard to diagnosis, he says that paludal fevers sometimes make their appearance immediately after parturition, but sulfate of quinin settles the doubt. Sleeplessness, nervous disquiet, and ill-smelling discharges are alarming symptoms.

His plan of treatment consists in local antisepsis to reduce the hyperthermia, to open and disinfect abscesses, sustain the vital forces, and combat peritonitis should it make its appearance.

NEWS ITEM.

The American Orthopedic Association will hold its seventh annual meeting at St. Louis, September 19, 20, and 21, 1893.

The following program has been arranged: "The Embodiment of an Idea," Presidential Address, by Dr. A. J. Steele, of St. Louis; "Tuberculosis and the Mind

Cure," by Dr. Ansel G. Cook, of Hartford; "A Case of Fragilitas Ossium, exhibiting over One Hundred Broken Bones," by Dr. Wallace Blanchard, of Chicago; "Congenital Deformities," by Dr. De Forest Willard, of Philadelphia; "A Case of Deformity of the Lower Limbs, with Spina Bifida," by Dr. William J. Taylor, of Philadelphia; "Congenital Absence of Both Clavicles, with Rotaro-lateral Curvature—Specimen," by Dr. A. J. Steele, of St. Louis; "A Case of Congenital Dislocation of the Hips—Patient," by Dr. A. J. Steele, of St. Louis; "Some of the Uses of Continued Extension," by Dr. Henry G. Davis, of Everett; "Historical Notes of the Use of Traction in Diseases of the Joints," by Dr. A. B. Judson, of New York; "The Value of Traction in the Treatment of Joint Disease," by Dr. H. L. Taylor, of New York; "The Value of Traction in Hip Disease as Investigated by Experiment," by Dr. E. H. Bradford, of Boston; "Exhibition of New Traction Mechanism for Hip Splints, with Remarks," by Dr. L. A. Weigel, of Rochester: "A Modification of the Long Traction Splint for Hip Disease, Designed to Provide a Light Apparatus for Little Children," by Dr. Augustus Thorndike, of Boston; "The Question of Excision of the Hip-joint for Tubercular Disease, and the Results of the Operation," by Dr. Harry M. Sherman, of San Francisco; "Cases of Osteo-sarcoma Simulating Tuberculous Hip-joint Disease," by Dr. A. J. Gillette, of St. Paul; "Acute Epiphysitis," by Dr. E. G. Brackett, of Boston; "High Temperature in Chronic Joint Disease," by Dr. Robert W. Lovett, of Boston; "Treatment of Abscesses and Sinuses," by Dr. A. M. Phelps, of New York; "Treatment of Abscesses Caused by Diseased Joints," by Dr. H. G. Davis, of Everett; "The Etiology of the Deformities of Knee-joint Disease," by Dr. A. M. Phelps, of New York; "The History of the Treatment of Tumor Albus of the Knee," by Dr. J. D. Griffith, of Kansas City; "A Contribution to the Treatment of White Swelling of the Knee," by Dr. A. B. Judson, of New York; "The Value of Fixation in Knee Disease," by Dr. George W. Ryan, of Cincinnati; "The Value of Traction in Tumor Albus of the Knee," by Dr. E. H. Bradford, of Boston; "A Splint for Making Traction in the Line of Deformity in Knee-joint Disease," by Dr. Robert W. Lovett, of Boston; "Exhibition of the Ideal Knee Splint, with Remarks," by Dr. John Ridlon, of Chicago; "Exhibition of a New Knee Splint—its Action and Advantages," by Dr. A. E. Hoadley, of Chicago; "The Operative Treatment of Knee-joint Disease," by Dr. De Forest Willard, of Philadelphia; "Excision of the Knee in Young Adults—a Study of Twenty-nine Cases," by Dr. C. L. Scudder, of Boston; "The Advantages of the Gradual Reduction of Flexion of the Knee due to Tumor Albus," by Dr. Augustus Thorndike, of Boston; "Forcible Correction of the Deformities Resulting from Knee-joint Disease," by Dr. J. E. Goldthwait, of Boston; "Internal Derangement of the Knee-joint," by Dr. L. A. Weigel, of Rochester; "The Mechanical Treatment of Osteo-arthritis of the Knee," by Dr. H. L. Taylor, of New York; "The Treatment of Injuries in and about the Knee by Massage," by Dr. Benj. Lee, of Philadelphia; "The Mechanical Treatment of Light Cases of Knock-knee," by Dr. Florian Beely, of Berlin; "The Manual Treatment of Bow-legs and Knock-knee," by Dr. Samuel Ketch, of New York; "Observations upon the Etiology and Treatment of Scoliosis," by Dr. A. E. Hoadley, of Chicago; "The Treatment of Lateral Curvature by Pressure Correction and Gymnastics, with Lantern-slide Illustrations," by Dr. L. A. Weigel, of Rochester; "Exhibition of the Paper Jacket, also of an Apparatus for Recording Rotation in Lateral Curvature," by Dr. L. A. Weigel, of Rochester; "Cast Correction in Connection with Jacket Construction," by Dr. Bernard Bartow, of Buffalo; "Demonstration in the Making of Ideal Leather Splints," by Dr. A. J. Steele, of St. Louis; "Observations on Pott's Disease, with Particular Reference to the Principles of Treatment and their Application," by Dr. Royal Whitman, of New York; "The Cause of Flat-foot," by Dr. Newton M. Shaffer, of New York; "A Double-lever Stretching Apparatus for Club foot," by Dr. T. Halsted Myers, of New York; "Bone Operations for the Correction of Club-foot, based upon an Analysis of 293 Operations by 100 Operators," by Dr. H. A. Wilson, of Philadelphia; "A Case of Adult Club-foot," by Dr. C. C. Foster, of Cambridge; "A Case of Club-hand, with Result of Operation," by Dr. R. H. Sayre, of New York; "Exhibition of a Splint-opener for Plaster-of-Paris Splints, also other Simple Devices," by Dr. Harry M. Sherman, of San Francisco; "Exhibition of an Orthopedic Bed," by Dr. L. A. Weigel, of Rochester; "Exhibition of the Improved Stretcher Splint."

Books and Pamphlets Received.

Prospectus of the London Post-Graduate Course. Fourth Year. Winter Term, 1893.

Bureau of Education. Circular of Information No. 2, 1892. Benjamin Franklin and the University of Pennsylvania. Edited by Francis Newton Thorpe, Ph.D. Washington: Government Printing Office, 1893.

Fifty-third Annual Announcement of the Missouri Medical College, Session 1893–94, and Catalogue of Session 1892–93. St. Louis, Mo.

Functional Exotropia. By Howard F. Hansell, M.D. Reprinted from the Annals of Ophthalmology and Otology, July, 1892.

Reactions. By F. A. Flückiger. Detroit, Mich: George S. Davis.

Annual Address of the President of the Brainard Medical Society. By W. A. Gordon, M.D. Reprinted from the Milwaukee Medical Journal, 1893.

Six Months' Medical Evidence in the Coroner's Court of Montreal. By Wyatt Johnston, M.D., and George Villeneuve, M.D. Reprinted from the Montreal Medical Journal, 1893.

A Case of Mediastino-pericarditis in a Child; Secondary Empyema; Operation; Death. By William A. Edwards, M.D. Reprinted from the International Medical Magazine, 1893.

The Diagnosis of Renal Insufficiency. By Allen A. Jones, M.D. Treatment of Renal Insufficiency. By DeLancey Rochester, M.D. Reprinted from the New York Medical Journal, 1893.

The Advantages of the Extension of the Head during Anesthesia and other Conditions. By Cephas L. Hard, M.D. Reprinted from the Southern California Practitioner, 1893.

The Prevention of Disease. The Annual Address of the President of the Buffalo Academy of Medicine. By DeLancey Rochester, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1893.

Missouri State Medical Directory. Published by the Medical Fortnightly. St. Louis, 1893.

The Pharmacopeia of the United States of America. Seventh Decennial Revision (1890). Published by the Committee of Revision. Philadelphia: J. B. Lippincott Company. Agents: P. Blakiston, Son & Co., 1893.

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ORIGINAL ARTICLES.

CASES OF HYSTERIA IN MEN[1]

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IT is gradually being shown that hysteria is not so rare in men as was formerly supposed. Not very long ago the proportion of male to female hysterical patients was said to be about one to twenty, but Dana, in his recent text-book, estimates it as one to four. My own experience makes me believe that the latter proportion is near the true one, and that the hysteria of males is much oftener mistaken for other diseases than is the hysteria of females.

A diagnosis of hysteria, however, should always be made with caution, and we must keep in mind a clear idea of what is sufficient to justify it.

If a patient presents symptoms that do not correspond with those of any other functional disease, and if thorough examination fails to discover any organic disease there is a certain probability that the affection is hysterical. But reliance on the diagnosis by exclusion alone is dangerous. Cases of multiple sclerosis and even certain cases of muscular atrophy have by this method been mistaken for hysteria. If, now, in addition to the probable exclusion of other diseases, we find evidence of a predisposition to hysteria, the diagnosis is materially strengthened. The predisposition may be hereditary or it may appear only in the patient's personal history, as acquired through disease, injury, or a drug-habit. Mitchell speaks of injuries of the nerve-trunks making the strongest men hysterical, and the hysterical form of traumatic neurosis has lately become familiar. In one of the cases I report the abuse of cocain seemed to predispose to hysteria; and in another of my cases, not reported, the prolonged use of chloral had, apparently, a profound effect of the same kind.

The most essential characteristic of hysteria is the occurrence of symptoms, of which the exciting cause is purely mental. This susceptibility to morbid suggestions, and the consequent whimsical variety and changeableness of the symptoms, are often clearly seen, as in the first case here reported. But in severe cases, or those of long standing, this susceptibility may not appear on the surface, and then hysteria usually reveals itself most clearly in characteristic seizures. These seizures are light or severe. The light ones are the familiar laughing and crying spells in which emotional expression is altogether out of proportion to the exciting cause. The severe ones, having some resemblance to epileptic convulsions, are called hystero-epileptic attacks. The features of a true epileptic attack are a single peculiar cry; a fall, regardless of circumstances; tonic spasm, in which the tongue is often bitten; with cyanosis and dilated pupils, followed by clonic spasm, with frothing at the mouth, ending in general relaxation and a return of consciousness. The attack occurs suddenly with only a very brief warning, if any, and ends spontaneously in a few minutes. During the seizure the patient never utters a sound, except the initial cry, and the movements have absolutely no appearance of purpose. In the hystero-epileptic attack, on the other hand, there is often an emotional cause and a long premonitory stage, gradually working up to the fall and apparent loss of consciousness; the movements, such as arching the back, struggling or throwing the limbs about, indicate a purpose, though often a grotesque one; the attack may last a long time and be repeatedly renewed; the tongue is not bitten, though the lower lip may be; the patient often screams or talks during the attack; unconscious evacuations never occur.

In severe cases the state between the paroxysms may be marked by highly characteristic symptoms known as hysterical stigmata. The most important of these are hemi-anesthesia, anesthesia whose distribution has no relation to the nerve-trunks or spinal segments, contraction of the visual field, and paralyses and spasms of various muscles without essential symptoms of organic disease.

A diagnosis of hysteria may therefore be based upon:

1. The exclusion of other functional diseases, especially of epilepsy, and of all organic disease.
2. The existence of predisposition.
3. The occurrence of symptoms in response to suggestion.
4. The occurrence of hysterical seizures.
5. The presence of hysterical stigmata.

The negative facts that exclude organic disease and epilepsy are of the first importance, and are

[1] Read before the Colorado State Medical Society, June, 1893.

more essential to the diagnosis than positive symptoms of hysteria; for a patient may have a tumor of the brain, or true epilepsy, and in addition present conspicuous signs of hysteria. Especial care must sometimes be taken to exclude multiple sclerosis, for its symptoms may strongly resemble the hysterical stigmata and be even more changeable.

Case I.—In March, 1893, A. G., twenty-four years of age, a fireman and prize athlete, came under my care. His father had convulsive seizures. The patient has always been unduly affected by a pathetic story or play, and has sometimes wept at the mere thought of a sorrowful occurrence. He is, nevertheless, one of the bravest of men in the line of his duty. A few weeks ago he happened to hear a conversation about heart-failure. When about to fall asleep that night he felt a pain in the cardiac region and was terrified by the idea that his heart might be failing. He broke into a profuse sweat and was unable to sleep, and so he arose and consulted the police-surgeon on duty, who reassured him and gave him a placebo. The next day he was all right until something reminded him of his fright, when he immediately had an attack of palpitation. Since then similar attacks have occurred, always preceded by the same idea. Examination shows absolutely no indication of organic disease of the heart or nervous system. Dr. Johnson informs me that this patient did very well on moral treatment and tonics, but had a decided relapse after seeing two of his comrades killed in a burning building.

The diagnosis was established in this case by the absence of other disease, the evident predisposition, and the marked relation of the alarming symptoms to morbid suggestion.

Case II.—C. B., civil engineer, of robust build, came to me in June, 1892. His family history was good. He had been well until within a year, when he began to use cocain habitually in the nostrils. Two months ago an attack of weakness and numbness of the limbs, dryness of the mouth, and sleeplessness was attributed to cocain-poisoning. About ten days ago the external application of a 10 per cent. solution of cocain to a small boil on the end of the nose was immediately followed by a feeling of great helplessness and fright. Since then he has been much distressed by pain at the back of the head, poor memory, and insomnia. He had just started on a long engineering trip, but on reaching Denver felt so badly that he consulted a physician. Unfortunately, he was told that an attack of apoplexy was impending and that he must not attempt to go on or to return home, for fear of precipitating the stroke. Greatly alarmed, he went to Dr. Bancroft, who kindly sent him to me. As a very careful examination showed no disturbance of circulation and no organic disease of the nervous system, while a strong mental influence was evident, the patient was given some iron and strychnin and assured that he could safely go on his trip if he would only disregard his bad feelings. He did so, and felt perfectly well for eighteen days, during which he successfully accomplished his work. But while returning home he had an alarming spell, in which the heart and respiration seemed to stop. At the same time a boil was found to be forming on the neck. At the first convenient stopping-place he consulted a physician. While the pulse was being taken the hand and arm became numb and felt as though bursting with blood. This sensation quickly spread over the whole body, which then felt as if it were being worked by electricity. I saw him a few days later and again reassured him by saying frankly that his symptoms were hysterical. He again improved, but after a time began to be troubled by sudden glimmering sensations before the eyes, followed by dimness of vision. Many months later he reported that he was about well, very seldom having spells of any kind and always being able to fight them off.

The mental origin of the symptoms was in this case plainly seen in the effect ascribed to the external application of cocain and in the queer feelings coming on while the pulse was being taken. The success of moral treatment confirmed the diagnosis.

Case III.—J. H., thirty-seven years of age, a bartender, came under treatment in January, 1893. His father was asthmatic and his mother was rheumatic. The patient was formerly asthmatic. Seven years ago, while alone on a long drive and very thirsty, he had a peculiar choking spasm of the throat, so that he feared he might die. Similar spasms have recurred ever since, and they occupy the greater part of his attention. Lately he has been having "nervous chills" just as he goes to bed. He complains of various queer sensations, and has a morbid fear of being alone in a small room or on top of a building. He fears he is going to be paralyzed. Careful examination reveals no sign of organic disease. Although the patient says he cannot restrain his spasm of the throat, he can reproduce it at will, and it consists merely of a prolonged swallowing movement with contraction of the platysmæ.

The mental causation of his "spasms" and "chills" was explained to him, and under moral treatment with placebos, he has, for the time at least, recovered.

Case IV.—March, 1893. A. B., aged eighteen years. Some months ago the patient thought he had sprained the right ankle. It was rested and bandaged, but pain continued long after an ordinary sprain would have been well. It was put in plaster, but to no purpose; as soon as an attempt was made to walk the pain returned. Finally he came to Dr. Van Meter, who, believing him to be hysterical, asked me to see him. We found the ankle to be normal in appearance and, when attention was withdrawn, free from pain or tenderness. A confident prognosis was given, and he was instructed to take an increasing amount of exercise every day in absolute disregard of pain. The faradic battery was

used merely for mental effect. In a few weeks the young man was playing foot-ball.

CASE V.—A., twenty-two years of age, supposes that he sprained both ankles some months ago, and has grown steadily worse in spite of treatment. On coming to Denver he placed himself in the care of Dr. Edmundson, who asked me to see him. We found him apparently unable to walk; indeed, he objected to standing for a few moments, saying he would suffer for days from the attempt. He was wearing blue glasses, even in the house, and said that his vision had of late steadily failed. There was a very marked facial twitch, and speech was at times embarrassed. Taking these symptoms superficially, we were both prepared to find a serious organic disease. But on examination the eyes, the various forms of sensibility, the reflexes, and the power to move any of the joints were all found to be normal. On being urged, he was able to stand perfectly well. The facial twitch was found to have existed since childhood, the remnant of an attack of chorea. After a confident prognosis he was treated by Dr. Edmundson with faradism, and graduated exercise in walking. In about six weeks he was able to walk four hours every day.

The two preceding cases are not examples of traumatic neurosis, because there was really no trauma. The following case is a good example of severe injury developing hystero-epilepsy in a somewhat predisposed person.

CASE VI.—J. B., forty-five years old, was of neurotic taint on the mother's side. The patient was a steady drinker, and had been rather "fast" from youth up, though an industrious and successful business man. When thirty years old the right forearm was crushed between cars, necessitating amputation near the elbow. A few weeks after the operation the patient had a violent convulsion, in which a great effort was required to hold him. Similar attacks recurred for many years, at first every few days, later at much longer intervals. Men were often called to hold him, and the more he was held the worse the attack became. Any annoying occurrence, even the sight of a person he disliked, would precipitate an attack. A drink of whiskey would sometimes prevent an impending attack. This patient is now neurasthenic, and sometimes has hysterical attacks of a mild type. When suddenly startled, as by a horse rearing in the street, he experiences a sudden stab of pain in the lumbar region.

CASE VII.—J. I., a locomotive fireman, twenty-seven years of age, whose mother's sister had convulsive seizures. His ill-health dates from failure to pass examination for promotion to engineer four years ago. In the winter of 1889–90, while hunting, he was taken with "chills" and general spasms, the head being thrown back and the spine arched. One attack closely followed another for a considerable time, and he begged his companions to kill him, saying he would rather die than live as he was. Afterward he had no recollection of saying anything. After resuming work, nine months later, he felt perfectly well for a time, but evidently had the idea that his work was bad for him. A few months ago he stopped work, and for a month past has scarcely been able to walk. He thinks he has spinal paralysis.

He is of strong muscular development; he walks with his knees rigidly semi-flexed and the ankles rigid and partly extended. He cannot extend either knee or flex the ankles; when he attempts to do so the opposing muscles strongly contract, and either hold the joint immovable or even move it a little in the opposite direction. The knee-jerks are normal. The patient is greatly startled on having them tested, saying that it goes clear through to his back. There is no ankle-clonus. Electric reactions of muscles are normal. He makes as much ado over the very mild electric tests as some men would over the amputation of a finger. The special senses and general sensibility are normal, except that there is an oval patch on the outside of each leg where the pain-sense is blunted. This analgesia is quickly removed by the faradic brush, but again returns. Urination is always normal.

The diagnosis of hysteria is based on the emotional disturbance at the beginning of the illness, the hysterical nature of the attack appearing soon afterward; the normal condition of the tendon-reflexes and the bladder (excluding lateral sclerosis and myelitis); the contraction of opposing muscles on attempting movement, and finally, the markedly hysteric demeanor. During the short time the patient could stay in the city treatment was successful in restoring normal motion to the knees, but the ankles were not improved. Could I have had this patient long enough I would have put him to bed for a short time and then have made him gradually begin to walk again, using electricity and massage for mental effect.

A very unfavorable factor in the prognosis is his interest in getting $1500 from his brotherhood, on the ground that he is totally disabled for his work as fireman.

CASE VIII.—Z. G., a merchant, twenty-three years of age; a Mexican by descent; has a good family history. Hystero-epileptic convulsions began at the age of sixteen while overworked at school. After apparent recovery the attacks recurred in the winter of 1888–89, and again in March, 1892. Dr. McGarvey, the family physician, describes the seizures as lasting an hour or more, and as marked by the most violent and grotesque contortions, accompanied by exclamations of "Oh, my back!" "Oh, my head!" etc. The patient says that before the attack eyes, head and spine all ache together, and that he afterward does not remember what he has said or done.

He is thirty pounds below his customary weight. There is no paralysis or ataxia and no marked tremor except of the eyelids. Sensibility to touch, pain, and temperature, is good everywhere except that touch is dulled in the left hand. Taste and

smell are normal. Hearing is impaired by otitis media.

There is a remarkable visual defect. Owing to spasm of the internal recti he wears a ten-degree prism, base outward, before each eye, and nothing less will suffice. Testing each eye separately, vision with the prism is normal; without it, less than 4/50.

The use of prisms also markedly affects the visual fields. Without a glass each field is enormously contracted. With a prism the field is greatly increased in extent, especially laterally. Prisms are ordinarly useful only in binocular vision. There is no optical reason for their increasing either the acuity of vision or the extent of the field. This anomalous effect, which was repeatedly verified both by Dr. Coover and myself, must be attributed to suggestion.

The patient would not submit to the rest-cure, which I advised, and he soon passed from my care. Dr. Coover operated on the eye-muscles with excellent temporary effect on the nervous condition. I have just learned, however, that the attacks have returned, and that since the last one there have been maniacal symptoms.

CASE IX.—E. H., thirty-two years of age, came under treatment in April, 1891. His father's mother and two of his father's sisters were insane. A half-sister by the same father is epileptic. The patient has always been sickly and liable to headaches. When sixteen years old, while out of school on account of headaches, he fell in running up stairs. He says he became unconscious and was afterward in bed for several weeks. The whole right side of the body was numbed; hearing on the right side was impaired, and there is said to have been some defect of speech. He could move the right arm and leg, but could not hold objects in the right hand. In a few months he apparently recovered, and for a number of years afterward earned his living as a bookkeeper, writing with his right hand.

At the age of twenty-six he one morning found himself unable to talk; he knew what he wanted to say and wrote it down, but could not utter a word. During the next four months he regained only a few words, and so he submitted to an operation by a distinguished physician of New York, who assured him that it would restore speech.

On recovering from the ether he was able to talk. There was no external wound and no soreness, and he did not know what had been done. A couple of months after the "operation" he had a convulsion, preceded for an hour or more by a sensation as of something crawling in the larynx. Similar attacks occurred at intervals of a few weeks for the next three years. He was then free from them during a residence of more than a year in Colorado. On going to California in January, 1890, the attacks returned and have recurred ever since. Three months ago he broke down from nervous prostration attributed to overwork.

The right arm and leg are distinctly weaker than the left, but the face is not affected. Tremor occurs on moving the right arm or leg, and the movements are decidedly ataxic. Attempting to stand with his eyes closed the patient falls to the right. The knee-jerks are exaggerated, especially the right, but there is no ankle clonus. Sensibility to touch, pain, and temperature, is greatly diminished on the entire right side, including the face and scalp, the boundary being sharply fixed in the median line. Hearing: left, 35/60; right, 8/60, with corresponding loss of bone-conduction. Smell and taste absent on right side. Vision (April 10th): left, 5/15; right, 5/25. The right field is greatly contracted, the color-fields being in their normal relation, but the green lying wholly to the left of fixation. The left field, though larger, is much contracted and the red lies within the green. For about 18° around fixation there is an area in which all objects are said to be blurred.

Three weeks later (May 2d), vision is found to have nearly doubled in each eye, yet the fields are of less than half their former diameters, and the scotoma in the left field has shrunk in proportion. The ophthalmoscope shows the eye-grounds to be normal. There is no nystagmus.

After one of the convulsive attacks, in which the mouth was bloody, I found a wound of the lower lip, but none of the tongue.

The late Dr. Wicks witnessed some of the attacks and gave me an imitation of one. The patient first walked the floor, rubbing his hands together and constantly growing more excited. There was some twitching of the hands, especially the right. After a time he uttered a cry and suddenly threw himself forward upon the floor, where he lay for a few moments perfectly limp. Then he jerked the right hand about and kicked with the right leg. The head was now drawn back and the teeth clenched. There was no frothing or biting and no cyanosis. The movements, which had every appearance of being voluntary, nearly ceased several times and then started up again. The attack lasted many minutes. Finally, the patient was aroused and he then complained of numbness in the right leg, which he kept kicking about in order to restore sensation. He gradually returned to his usual condition and showed no disposition to sleep.

It became very evident that under repeated examination by myself and others the patient was steadily growing worse. I did not have charge of him long enough to carry out any plan of treatment.

The diagnosis in this case was made only after considerable study. The intention-tremor at first suggested multiple sclerosis. But there was nothing else characteristic of sclerosis, and the tremor of hysteria may be exactly like typical intention-tremor. Moreover, a diagnosis of multiple sclerosis, even if established, could not account for all of the phenomena.

The apparent hemiplegia, with hemi-anesthesia and loss of smell, taste, and hearing, on the same side, suggested the possibility of an apopletic lesion of the internal capsule at the time of the fall on the stairs. Against this are several weighty considerations. His age at that time was very unfavorable

to any form of apoplexy, while the paralysis of arm and leg, without involving face or tongue, is highly characteristic of hysteria. Hemi-anesthesia, while quite possible as a result of a capsular lesion, is, taken by itself, more likely to be hysterical, and the fact that the visual defect is not hemianopsia proves conclusively that the sensory part of the capsule has not been destroyed.

On the other hand, positive proofs of the existence of hysteria are abundant. The loss of speech must have been hysterical, for the patient wrote what he wanted to say, while in genuine aphasia, either motor or sensory, writing suffers at least as much as utterance; a sudden lesion of the bulbar nuclei, without other symptoms, is out of the question, and prompt recovery under a sham operation could occur only in hysteria. The contraction of the visual fields is such as occurs in hysteria. The inclusion of the red field by the green never occurs, as far as I know, from any organic disease. It is rare in the hysteria of Americans, but comparatively common in France. The marked shrinking of the fields and of the partial scotoma, while the acuity of vision increased, is utterly inexplicable except as an hysterical freak.

Finally, aside from many minor facts in the demeanor of the patient which pointed to hysteria, there can be no doubt that the attacks witnessed by Dr. Wicks were hysterical.

In considering all of these cases taken together, I see no essential difference between hysteria in men and hysteria in women. It may be that there is less of a craving for fuss and sympathy in men than in women, but in its large features the disease appears to be the same in both sexes.

ON THE INCREASING PREVALENCE OF SCABIES.[1]

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UNDER the foregoing title Dr. James C. White, several years ago, called the attention of the profession to the increasing frequency of this disease, especially with reference to his own city, Boston.[2] The same tendency had been observed by me for several years previously in Philadelphia, and had, indeed, been so striking that at that very time a greater part of the data here presented was prepared for publication. Since then the proportion has kept its high place, and has, upon the whole, with slight fluctuation, been steadily growing, so that at the present time in the dispensary practice of this city the itch constitutes 10 to 15 per cent. of all skin cases. The following table (Table I) summarizes my own observations at the various services for skin disease with which I am or have been connected:

TABLE I.—SHOWING THE INCREASING PREVALENCE OF SCABIES IN PHILADELPHIA.

		1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
Philadelphia Disp. for Skin Diseases	No. patients	217	308	331	279	239	388	277	433	642	688	451	...	...
	Scabies	8	5	9	3	11	14	20	48	100	66	52	...	...
	Percentage	3.69	1.62	2.72	1.07	4.6	3.61	7.22	11.09	15.58	9.59	11.53	...	...
Northern Disp., Skin Service	No. patients	440	464	460	538	405	...	...	...	...	...	...	495	500
	Scabies	3	10	13	16	16	...	...	...	...	...	...	64	61
	Percentage	0.68	2.15	2.83	2.97	3.95	...	...	...	...	...	...	12.93	12 2
University Hosp., Skin Dispensary	No. patients	...	...	...	...	448	402	396	515	433	435	...	...	...
	Scabies	...	...	...	...	3	13	13	24	38	28	...	...	...
	Percentage	...	...	...	...	0.67	3.23	3.3	4.66	8.77	6.44	...	...	...
Philadelphia Hosp. Skin Ward	No. patients	...	...	...	...	...	...	...	77	110	103	180	163	152
	Scabies	...	...	...	...	...	...	...	9	18	15	11	11	12
	Percentage	...	...	...	...	...	...	...	11.7	16.36	14.56	6.11	6.75	7.89
Howard Hospital, Skin Dispensary	No. patients	...	...	...	...	...	...	...	...	241	182	213	295	149
	Scabies	...	...	...	...	...	...	...	...	12	29	6	39	18
	Percentage	...	...	...	...	...	...	...	...	4.98	15.93	2.82	13.22	12.08
Jefferson Hospital, Skin Dispensary	No. patients	...	...	...	...	...	...	...	...	...	...	438	841	538
	Scabies	...	...	...	...	...	...	...	...	...	...	37	146	90
	Percentage	...	...	...	...	...	...	...	...	...	...	8.45	17.36	16.73
Totals	No. patients	657	772	791	817	1092	790	673	1025	1425	1408	1282	1794	1339
	Scabies	11	15	22	19	30	27	33	81	168	138	106	260	181
	Percentage	1.67	1.94	2.78	2.32	2.75	3.42	4.9	7.9	11.77	9.8	8.27	14.49	13.52

It will be clearly seen by a glance at this table that scabies is becoming a common disease among the poor, and that it is not limited to particular parts of the city, although it is, it is true, much more

[1] Read at the Forty-third Annual Session of the Medical Society of the State of Pennsylvania, held at Williamsport, Pa., May 18, 1893.

[2] Boston Medical and Surgical Journal, February 14, 1889.

common at those centers toward which the foreign population trend. For example, the Northern Dispensary and the Jefferson College Hospital show the largest proportions, the former being close to the German population, and the latter near the Italian and Russian quarters. Moreover, it is not to be inferred that the percentages here given, although large, really represent the actual prevalence of the disease, for it is much more common than here noted. It is the custom in connection with dispensary services to record only such cases as personally present themselves, whereas often enough the patient is but one of a whole family affected.

Nor is this increase limited to one or two parts of our country, but it is widespread. Naturally, it is more frequently seen in our Eastern seaport cities. This general prevalence is shown in the next table (Table II), made up from the returns of the various members of the American Dermatological Association, as published in the *Transactions:*

of the American Dermatological Association, will show:

TABLE III.[1]—SHOWING THE INCREASING PREVALENCE OF SCABIES IN PRIVATE PRACTICE THROUGHOUT THE UNITED STATES.

	1880	*1881*	*1882*	*1883*	*1884*	*1885*	*1886*	*1887*
No. patients	2848	2641	3554	3656	2931	3737	2481	2849
Scabies	15	7	26	34	33	49	56	62
Percentage	0.52	0.26	0.73	0.93	1.12	1.31	2.25	2.17

In seeking for causes for this increasing frequency several of the more potential factors, which are to a great extent responsible, should be referred to. Of first importance is the character of recent immigration. It is common knowledge that the present immigrant is, on the average, far below the standard in cleanliness, etc., that obtained some years ago, and this extremely undesirable class, largely made

TABLE II.[1]—SHOWING THE INCREASING PREVALENCE OF SCABIES IN BOSTON, NEW YORK, BALTIMORE, CHICAGO, AND ST. LOUIS.

		1880	*1881*	*1882*	*1883*	*1884*	*1885*	*1886*	*1887*	*1888*	*1889*	*1890*	*1891*
Boston	No. patients	3315	3264	3212	3190	3228	4054	4401	4515	4782	3460	3012	5310
	Scabies	29	22	67	96	179	224	334	374	494	368	254	392
	Percentage	0.87	0.67	2.08	3.01	5.54	5.52	7.59	8.28	10.33	10.63	8.43	7.38
New York	No. patients	3326	3837	3231	6684	2737	3596	5692	...	2439	8055	914	487
	Scabies	35	64	76	132	52	36	178	...	151	282	87	31
	Percentage	1.05	1.66	2 35	1.97	1.89	1.0	3.12	...	6.19	3 5	9.52	6.36
Baltimore	No. patients	663	503	520	623	...	1132	673	1075	489	...	...	2405
	Scabies	9	6	6	2	...	8	8	24	24	...	...	111
	Percentage	1.35	1.19	1.15	0.32	...	0.7	1.19	2.23	4.9	...	...	4.61
Chicago	No. patients	2587	2100	2564	3167	2414	2675	2546	2010	2979	2741	1832	2744
	Scabies	14	31	22	72	56	56	34	72	59	80	48	97
	Percentage	0.54	1.47	0.85	2.27	2.32	2.09	1.33	3.58	1.98	2.92	2.62	3.53
St. Louis	No. patients	260	264	424	450	555	888	...	1009	1075	1026	...	1628
	Scabies	...	...	1	7	13	74	...	36	27	28	...	47
	Percentage	...	...	0.24	1.55	2.34	8.33	...	3.56	2.51	2.72	...	2.88
Totals	No. patients	11047	11076	11402	15490	8934	14007	14666	10366	14253	17544	6484	12574
	Scabies	100	134	202	334	300	442	632	643	965	960	426	678
	Percentage	0.9	1.21	1.77	2.15	3.36	3.15	4.31	6.2	6.76	5.53	6.57	5.39

When a disease of the character of scabies becomes so common among the poor, it may be certain that sooner or later it will, through many obvious channels, find its way among the better classes. And this is, indeed, already the fact. It was not until six or seven years ago that I saw a case in private practice, and then only one or two cases a year; whereas now an experience of ten to twenty cases yearly is not unusual. This I feel certain is also the experience of my colleagues in Philadelphia and in other parts of the country, as, indeed, the following table (Table III), compiled from the *Transactions*

[1] Includes both dispensary and private cases.

up of Russians, Poles, Huns, and Italians, have, especially for the past eight or ten years, been arriving here in great numbers. Judged by dispensary observation, it would seem that the itch is the normal state in the steerage of to-day, and many of those even who are free from the disease when embarking, are fairly certain to acquire it on their way over. These cases arriving in our midst are so many additional foci for its spread. Another factor in its increase, and not an unimportant one, is the

[1] After 1887 the private and dispensary cases were merged in the returns. Since that date private cases have, according to my own experience and that of others, increased almost as rapidly, proportionately, as have the dispensary cases.

"day nursery." An affected child is placed here for the day; it comes closely in contact with its comrades, and before its short sojourn is over several more cases have had their origin and are themselves carriers for the further spread of the disease. The children's "home," and "asylum" are likewise often responsible, for it is not unusual to find that the invasion of a whole family may be traced to the return home of a child temporarily placed in such institutions. These statements are not made at random, but are based upon repeated observation. The cheap lodging-houses are also fruitful centers of contagion; many of the Philadelphia (charity) Hospital cases have their origin in such places. Another element in its increase, and especially among the better classes, is to be found in our growing tendency to travel, and the rapid multiplication of travelling salesmen and drummers. With ordinary and proper precautions on the part of hotels, this factor should sink into insignificance, but it is extremely doubtful if the linen in the average hotel bed is always changed, or changed in its entirety, after a single night's occupation; and yet, if not, and had an affected person slept therein, the next occupant will almost assuredly contract the disease. I mention this method of spread for the reason that in a large proportion of private patients whom I have treated for scabies, the disease could be distinctly traced to such a source; nor were the cheaper hotels alone culpable. Finally, the failure on the part of physicians to recognize the disease, especially when ill-developed or in its beginning stages, must be looked upon as an important element in explaining its increasing prevalence. This is not said to reflect upon the profession, for it is the result of lack of opportunities. Graduates of the present day, if they make use of their advantages, are pretty well schooled in the recognition of this disease, as it is now a common one at the clinic; but some years ago—during my own student days, in fact—the presentation of a case of scabies was rare.

There are several points regarding the eruption which, if kept in mind, will serve to prevent error in diagnosis: distribution, itchiness, multiformity, the presence of burrows (cuniculi), and the linear character of many of the lesions. Moreover, in a majority of the cases inquiry will disclose the existence of the disease in a bedfellow, comrade, or in others of the family. The burrow, which is pathognomonic, is not always present. Special stress, in my opinion, should be laid upon the distribution and the linear character of the lesions as diagnostic symptoms of great value, and invariably present. Some or many of the lesions are always found to be longer than they are broad, appearing as elongated or oblong papules, vesicles, and pustules; scattered lesions of this kind, especially when seen about the fingers and hands, wrists, axillary folds, shaft of the penis, and anal region, even though few in numbers, should always excite suspicion. As a rule, private cases are most difficult to recognize, inasmuch as such persons are usually extremely solicitous about any skin-irritation, take daily baths, use soap and water freely, so that the disease is measurably held in check and the eruption remains scanty. It is not rare in some of the private cases to find but two or three lesions upon the fingers or other parts of the hand, possibly a few on the wrists, and one or several on the penis, with here and there an excoriated papule or a scratch-mark over the lower trunk. Even in private cases the anal region is a common site for several or more lesions.

The treatment of scabies is well known. It is as simple as it is efficacious, and every case thoroughly and quickly cured frees the community of a moving and active contagion-carrier. In the average case of the dispensary class I have usually prescribed a compound ointment, consisting of an ounce of sublimed sulphur, an ounce of Peruvian balsam, thirty to sixty grains of β-naphthol, and sufficient benzoated lard or petroleum ointment to make four ounces. The patient is directed to take a soap and hot water bath. Ordinarily any good toilet soap will answer, but in those of sluggish, thick skin, or of filthy habit, a good sulphur soap or sapo viridis is preferable. After the bath the ointment is to be energetically rubbed in over the whole surface from the chin down, special attention being given to the parts most affected. The back should not be neglected, the application to this part being preferably made by another person. Clean linen is put on, and clean bed-linen used; the soiled linen is to be boiled. At the end of ten or twelve hours another application of the ointment is made, and so on for six applications. During this time the same linen is worn. Some hours—about half a day—after the last application another bath is taken and a complete change of linen made. The linen which had been worn, as in fact all the underwear and bed-linen before being used again, should be thoroughly boiled. By boiling, all stray parasites and their ova are destroyed. During the treatment it is advisable to have a dusting-powder of sulphur sprinkled in the bed, in the bureau-drawer, and in other suspicious places. All outer clothing should be subjected to high temperature, if possible, or thoroughly beaten and hung out in the air and sun. Other members of the family should undergo inspection, and those affected treated in the same way, and those doubtful advised to make two or three thorough applications. It is only in this manner that the disease is cured and its recurrence prevented. In young children and infants the

β-naphthol is omitted and the quantity of sulphur reduced to one-half. In these younger cases, particularly infants, the disease often invades both face and scalp, also especially the lower part of the face, and this fact should not be forgotten in the treatment. In private practice I have commonly prescribed the same ointment, but with the β-naphthol omitted. In some cases, also, an ointment made up of equal parts of styrax and lard; two to four applications will usually suffice in these patients.

To control the cutaneous irritation which is not infrequently set up by the scabies or by the sulphur applications, and which sometimes persists for several days or longer after active treatment has been discontinued, it is well to advise the application, two or three times daily, of a saturated solution of boric acid, containing one to three drams of carbolic acid, two drams of glycerin, and four drams of alcohol, to the pint. Should the treatment have been inefficiently or carelessly carried out, as not infrequently happens in dispensary practice, evidences of an active return of the disease will soon appear, and a repetition of the plan described above, somewhat abbreviated, will be found necessary.

As to controlling the spread of the disease, in the broad sense of the term, and placing it again low down among the comparatively rare skin-diseases, I am convinced much can be done. The recognition and prompt cure of each case, as soon as it is presented, as already remarked, is a step in the right direction. Patients should be cautioned as to the contagious nature of the disease. Moreover, there is absolutely no reason why an immigrant with the itch should be allowed to land. The disease may be rapidly cured, when circumstances demand it, by employing much more energetic measures than those already mentioned, but which need not be outlined here. Such an immigrant may be rendered entirely harmless in an hour or so by such vigorous treatment, during which time his clothing and effects could be baked, steamed, or sulphur-fumigated. Energetic treatment of this kind, it is true, often leaves the skin in a state of active irritation, but this with several days' use of a mild, soothing ointment will subside. Infants and young children should be carefully inspected before being admitted to "day nurseries," "asylums," or "homes," and if found with any evidence of skin-disease should be rejected till a professional assurance of its harmless character is obtained. The same rule should be applied in the admission of children to the public schools. Hotels, small or large, should be legally required to make complete change of bed-linen before the bed is assigned to another occupant—not to mention other reasons why this should be done. Lodging-houses to which cases may be clearly traced should be reported to the Health Board for investigation, and the institution of proper measures of disinfection.

It is, I know, a common thing to speak of the itch with more or less humor, as a joke, but it is an exceedingly unpleasant experience for the immediate victim, his family, and for the community at large. A disease so readily cured, so readily controlled, and so readily preventable as this, has no reason for its existence in our midst—certainly not to such a great extent as it exists at the present day.

223 S. SEVENTEENTH STREET.

ORIGINAL LECTURE.

CHRONIC NEPHRITIS WITH HEART-COMPLICATIONS.

BY JOSEPH M. PATTON, M.D.,
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GENTLEMEN: We have this afternoon two cases which are of much interest, because they present different phases of the same disease, phases that are of interest both from a diagnostic and from a therapeutic standpoint. This gentleman is fifty-five years of age. He has followed various occupations, none of which entailed very vigorous labor, while they all furnished him with plenty of exercise. He has always been in good health, so far as his memory serves him, until within the past two years, when he noticed that he was passing considerable urine—not that this troubled him any, for with the common idea that people have that when they are passing plenty of urine there can be nothing wrong with the kidneys, he gave this matter little attention; but as we call his attention to it he remembers that for a long time he had to get up two or three times during the night to empty his bladder. He says that about a year ago he at times noticed a little swelling of his ankles, but as he was on his feet a great deal during the day he paid little attention to it. Some six months ago he noticed that this swelling was a little more marked, and that he began to suffer from shortness of breath, which became so marked that at times he was unable to follow his business. About a month after this it began to trouble him seriously, and he noticed that his urine became more scanty; that it was cloudy in appearance, and that micturition caused him some little irritation. He was then also suffering from more dyspnea than he had formerly experienced; he had some slight cough. The swelling in the lower extremities began to increase until he called in the services of a physician. This condition became worse, instead of better, until the edema of the lower extremities reached above the knee. The skin was very tense and shiny, and in one or two places had broken, and the serum was oozing. He had now very great dyspnea, could not lie down, could not walk, and there was some cough and expectoration of a little frothy mucus. The appetite was bad; the stomach irritable; the bowels were comparatively regular. At this time he appeared at the clinic, and on examination we found the condition described. We found that his heart was very much enlarged; the apex was under the sixth rib, about half an inch outside of the nipple-line. The

first sound heard was diminished in force and very muffled in character. The second sound was relatively intensified, particularly over the aortic and pulmonic valves. The lower third of the lung was edematous from passive congestion; the liver was considerably enlarged from the same cause. The man was passing about eight ounces of urine in twenty-four hours, and the secretion contained a large percentage of albumin, some granular casts, and occasionally also hyaline casts. The specific gravity was 1024, and the urine was of a dark and reddish color. Here, then, was a case evidently of chronic nephritis, probably of the parenchymatous variety, upon which had been engrafted an acute inflammation of the kidney, which caused the sudden appearance of all the severe symptoms and the great diminution in the amount of urine secreted.

At that time the man was placed upon the following treatment: He was given three grains of calomel three times a day, until he had taken six doses. This was for its diuretic effect. A small amount of deodorized tincture of opium prevented any pronounced laxative effect upon the bowels, and allowed time for its effect on the kidneys. He was given a small dose of fresh infusion of digitalis containing ten grains of potassium nitrate. The dose was at first two teaspoonfuls every four hours; this was gradually increased to a tablespoonful, and in the course of two days he was taking a tablespoonful every four hours, night and day. In the course of three or four days the amount of urine had increased to four quarts in the twenty-four hours, and the man continued passing from four to four and a half quarts of urine daily for about five or six days, when the quantity gradually returned to from sixteen to twenty ounces. By this time the edema of the limbs had entirely disappeared, as had also the edema of the lungs and the congestion of the liver. The patient was now given small doses of sodium bromid with a preparation of pepsin and tincture of nux vomica for his stomach. He progressively continued to improve for about two weeks, when suddenly his pulse dropped to 32 beats per minute. At this time he reappeared in the clinic, and on examination of his heart we found that it was beating at about 80 per minute, while the radial pulse only showed from 35 to 40 beats per minute. This was due to the fact that every alternate cardiac systole was a very weak one, and while each beat of the heart could be distinctly heard with the stethoscope, all of the sounds being distinguished, the weak beat did not affect the radial arteries. The heart was arrhythmic and irregular both in force and rhythm. The first sound was distinctly muffled, and the second sound was very much more intensified than formerly. The digitalis was stopped, and caffein was given. This was administered in the form of the alkaloid of caffein combined with sodium benzoate. This makes a solution which contains about 48.5 per cent. of caffein. A soluble salt is also readily made of this medicament with sodium cinnamate or salicylate. The combination with sodium cinnamate contains about 58.9 per cent. of caffein, and that with sodium salicylate 61 per cent. of caffein. It is a matter of election which of these salts you will use. As a matter of experience, I am more in favor of sodium benzoate. Three drams each of sodium benzoate and the alkaloid of caffein were ordered in three ounces of distilled water. A teaspoonful of this mixture was given every four hours. At the time that this was prescribed the heart was very irregular, at times beating 35 to the minute at the wrist, and again 60 or 70, and then dropping back suddenly to 35 or 40. The first sound was so weak, and the second sound so much intensified, that it appeared doubtful if any good effect could be obtained from cardiac stimulants. Under the use of this combination, however, he steadily improved, and in the course of ten days his pulse became quite regular. The action of the kidneys was maintained by means of this prescription, without any other medication. As you see him to-day, he looks quite well; there is no edema of the feet; no congestion of the lungs; no congestion of the liver. He is able to walk at a moderate gait, and to climb steps without getting very much out of breath. The pulse now is 76 to the minute, strong, and regular. As you examine his heart you notice that the apex is just under the nipple. The first sound is of a very fair character, though not as strong as it should be in a perfectly healthy heart. The second sound is still somewhat intensified over the aortic and pulmonic valves. The man eats well, and digests well; his bowels are regular, and he is passing about the normal amount of urine, which contains no albumin; and to-day we are unable to detect any casts in the sample that he has furnished us; they are probably temporarily absent.

This is a somewhat better result than you would expect in most cases of the kind. When cardiac disease has resulted from chronic nephritis, and you have dilatation, as in this case, and reaching the extent present here, it is very difficult to obtain any marked or permanent improvement, and the result in this case is largely due to the man himself; he was willing to go to bed, remain on his back for six or eight weeks, keep perfectly quiet, avoid excitement of all kinds, and confine himself to a limited diet, consisting of milk, broth, liquid beef-peptonoids, and as he grew better occasionally a poached egg and a little toast with tea.

This other man whom we show you to-day is thirty-eight years old. He has been a business man all of his life, and actively employed. He says that he has never previously been ill, but for the last six months he has been troubled with dyspnea, at times a little cough, some sleeplessness, and a capricious appetite He claims never to have noticed anything wrong with the action of his kidneys; that he never was compelled to get up at night, with any regularity, to pass his urine, and disclaims any idea of kidney-disease. He has been under treatment for two or three months for the dyspnea, which his physicians told him was due to a nervous irregularity of the heart. About four months ago he came to the clinic exhibiting great edema of the lower extremities, some congestion at the base of the lungs, marked dyspnea on exertion, loss of appetite, insomnia, and great muscular weakness. Examination of his urine showed that its specific gravity was 1022; it was of a rather light color, and contained a small amount of albumin, with a few granular casts. Examination of his heart disclosed a very much enlarged left ventricle, the apex being three-quarters of an inch outside of the nipple line and under the sixth rib. There was no evidence of valvular disease. The ventricle had evidently undergone hypertrophy and subsequent dilatation. The condition at that time, the man maintained, developed quite rapidly.

There was no history that would indicate an acute attack of parenchymatous nephritis, so that unless over-exertion were responsible for the precipitation of his symptoms, we are unable to tell the cause.

He was placed upon the same treatment as the case we have just detailed, that is, calomel as a diuretic, and infusion of digitalis. Of the mercurial he took a little too much through mistake and suffered a slight stomatitis, which responded readily to the action of a potassium chlorate mouth-wash. He improved rapidly under this treatment, and in the course of a week had gotten rid of his dropsy; his dyspnea had disappeared; the heart's action was regular, and he was feeling very much improved. The necessity of quietness was enjoined upon him, which injunction he failed to observe very closely, and shortly after this, while upon the street one day, he suddenly lost consciousness. He was taken home, and I saw him about six hours afterward. At that time he was not entirely unconscious, but could be roused partially. There was hemiplegia of the right side, with ataxic aphasia. The heart's action was regular and somewhat slower than it had been. From what I could learn from those who saw him after the attack, he was probably never totally unconscious, and with difficulty could be partially aroused. This is an important point in the differential diagnosis of this condition, which is due cerebral embolism. It is of importance in such an attack as this to determine just what we have to deal with. We know that embolism is frequent in diseases of the heart associated with nephritis, and that it may occur at any age. This man is not too young to be liable to cerebral hemorrhage, so that the liability to it from the standpoint of age would have some bearing on his case. Right-sided hemiplegia, with ataxic aphasia, points toward embolism, the left middle cerebral artery being in more direct communication with the left ventricle. The territory supplied by this artery is the one liable to suffer from the effects of embolic plugging as a complication; consequently right-sided hemiplegia is more distinctive of embolism, and left-sided hemiplegia more distinctive of hemorrhage. In hemorrhage the coma appears with the same suddenness as it does in embolism, but it is more profound, and lasts for a greater length of time. In embolism the coma is more liable to be partial than complete, and wears off sooner than in hemorrhage. In hemorrhage the face is usually flushed during the attack, or has a congested appearance, whereas in embolism it is usually pale, as was the case with this man. The breathing in hemorrhage is stertorous and puffing in character; whereas in embolism it is somewhat slower than usual, but otherwise not distinctive. The pupils in hemorrhage may be dilated, contracted, or unequal; in embolism they are more likely to be unchanged. The pulse in hemorrhage is more likely to be irregular than in embolism, although on account of the cardiac conditions present in this instance the pulse could not be relied upon to furnish any diagnostic points. You are more likely to have aphasia associated with hemiplegia of the right side in embolism than in hemorrhage. The aphasia is usually of the ataxic variety. It may be amnesic in kind—that is, with the ability to phonate, but only to pronounce such words or sentences as are repeated to the patient by others. In the ataxic variety there is an intelligent conception of words, but inability to coördinate the muscles to perform phonation. The coma in this case began to improve in about twelve hours, which is rather sooner than it would in hemorrhage. This improvement was gradual, and in the course of three or four days the man was able to coördinate the muscles of his jaw and the muscles of phonation so that he could talk fairly well. About twenty-four hours after the attack his pulse dropped to thirty-five beats per minute. This was due, as in the previous case, to alternate weak and strong contractions of the heart.

An interesting and peculiar feature of the cardiac rhythm that developed in this case has been called the "gallop-rhythm," because it resembles the sounds produced by the hoofs of a galloping horse. It has been described by various writers, notably by Potain, and also at some length by Fraentzel. Various causes have been ascribed to the production of this symptom, some claiming it to be due to unequal contraction of the ventricles. Fraentzel assumes that it is due to unequal tension in the two vascular systems, so that the closure of the pulmonic valves is not synchronous with that of the aortic valves. He describes it as a triple rhythm, consisting of three sounds, the second of which is an accentuated sound, a long interval occurring between the second accentuated sound and the third or last sound, two of these sounds occurring in diastole. This he claims to be the essential feature of the so-called "gallop-rhythm." This peculiar action of the heart may be found in disease of the kidneys associated with cardiac disease; also in some acute diseases, such as typhoid fever, pneumonia, etc. I have observed it in a number of instances, but never before have I had as good an opportunity of studying the sympton during its production and continuation as in this case. It is very evident to me, from examinations made at the time, that in this particular instance the production of the peculiar rhythm was due to the following conditions: There were alternate strong and weak contractions of the heart. The interval between the weak contraction and the strong contraction was greater than that between the strong contraction and the weak one, so that two beats of the heart appeared rather closely together. The muscular element of the first sound was most entirely lost on account of the degeneration of the myocardium and the dilated condition of the heart-cavities. The second cardiac sound was very much intensified, and was much the louder of the two sounds. During the stronger contraction of the heart the first, muscular sound, could be distinctly heard. With the second contraction of the heart, or the weak contraction, the first sound of the heart could not be heard, and the second very faintly, so that in listening to the action of the heart we heard the ill-defined first sound of the strong contraction, followed by a very much accentuated second sound of the strong contraction; then follows an interval longer than that between the first and second sounds just described; this interval covers the period of the first sound of the weak contraction, which is entirely lost, this period being followed by the second sound of the weak contraction, which is ill-defined, thus giving us a rhythm which is composed of three sounds, the second of which is accentuated. In the character of the rhythm, this corresponds to the gallop-rhythm described by both Potain and Fraentzel; it does not correspond

with Fraentzel's claim that two of the sounds must be produced in diastole, unlesss you admit that the diastole following two different contractions may be included in this definition. It is plain here that two of these sounds were produced in diastole, but they belonged to two different contractions of the heart. This peculiar symptom lasted for about a week, and gradually receded with the general improvement. At this time the patient is under the influence of caffein, as is the other patient, and this has been continued with more or less regularity up to the present time. As you see him now, he is still suffering from the effects of the hemiplegia, having little use of his right limb and none at all of his right arm. The face has regained its natural expression; he is able to talk freely, and is in a fair general condition. The hemiplegia is more persistent in this case, probably on account of the poor general nutrition. The man's heart is still considerably enlarged; the apex is one-quarter of an inch outside of the nipple-line and in the sixth interspace. The action is regular; the first sound is fairly well defined, but there is still considerable intensification of the second sound.

I am glad to present these two cases side by side, as they represent the uncertainties of prognosis in these cases. The younger man, at the time the dropsy was so marked, presented every indication of being a much more favorable case than the older one, and yet we now have a condition which can only be recovered from partially, and which leaves an unsatisfactory result. Both patients are taking caffein two or three times a day, together with iron, strychnin, and arsenic as general tonics.

I have here a young lady whom I wish to show you more as a matter of curiosity than for any other reason. She is twenty-three years of age, and has always been in fair health. Her mother tells me that she has always noticed that from a child the girl was inclined to get blue about the face and hands upon the slightest exertion; that there is always some dusky redness of the extremities present, such as you see now. The hands and forearms are of a rather dusky-red color. The circulation is poor, and the hands are cold. The fingers, you will notice, are slightly clubbed; the nails are widened, arched, and bent somewhat inward. You notice as she exerts herself walking up and down the room, she acquires the same dusky hue of the face that is present in the extremities. She also suffers from dyspnea on moderate exertion. She does not complain particularly of cough; in other ways she seems to be healthy.

Upon examination of her lungs we find nothing which would account for the dyspnea. Upon examination of her heart you hear a very loud, blowing, systolic murmur, which can be heard all over the chest, front and back, and in the course of the brachial arteries. This murmur can be heard through all of her clothing, and appears to be of the greatest intensity about the upper border of the third rib upon the left side of the sternum. The apex is in the proper position, and is not displaced at all to the left. The heart shows no unusual force or effort in its action, and there appears to be no change in the condition of the heart-muscle or in the size of the cavities.

The question of diagnosis here is the only one of interest. We have to diagnosticate this condition from any other systolic murmur which might be present. If it were due to aortic stenosis, the murmur should be heard on the right of the sternum in the second intercostal space, should be conveyed into the vessels of the neck, and there should be some resulting change in the size of the left ventricle from an aortic stenosis of such long standing. If the condition were due to mitral regurgitation the murmur should be heard in the mitral area, transmitted to the left, should be much softer and there should be compensatory changes in the right ventricle. These conditions are absolutely wanting. The character of the murmur, its loudness, its duration, its position of greatest intensity, the lack of any particular direction of transmission, the lack of any secondary changes in the heart-muscle or cavities, combined with the cyanotic appearance of the peripheral circulation and the history of a continued condition of this kind, would compel us to make a diagnosis of communication between the right and left sides of the heart of a congenital character. The time of this murmur, which does not in the least precede the first sound, and its point of greatest intensity, its duration, and its loudness, would indicate to me that the particular condition of the heart would probably be a deficiency in the upper portion of the ventricular septum, rather than an open foramen ovale. This communication we know often exists through the foramen ovale in the septum of the auricles. It may also result from deficient closure of the upper portion of the ventricular septum, which is normally very thin. Some writers claim that insufficient closure of the foramen ovale (the foramen is closed by a valve in the fetus, and may remain open after birth) does not lead to any admixture of the blood of the two auricles, or, at least, does not produce any symptom which is discoverable during life; and that insufficient closure of the ventricular septum does not lead to any discoverable symptoms. It has also been claimed by some that the mixture of venous with arterial blood does not cause cyanosis. The report of a case in which the left subclavian artery arose directly from the pulmonic artery, and in which the left upper extremity was normal in color, has been used to refute the opinion of older writers that the admixture of blood caused the cyanosis. Whatever the actual cause of cyanosis may be, it is a clinical fact that those cases in which the cardial septum is deficient exhibit cyanosis as a symptom.

Therapeutically, there is nothing to be done for these cases as long as the heart undergoes no change and has sufficient dynamic integrity to perform its functions. In a diagnostic way they are always interesting, and this case is simply shown for that purpose.

Congenital Umbilical Hernia into the Cord.—WARREN (*Archives of Pediatrics*, vol. x., No. 8, p. 627) has reported the cases of two infants in each of which congenital umbilical hernia existed at birth, for the relief of which an operation was successfully undertaken. In the one instance the hernial sac, upon operation performed when the child was twenty-four hours old, was found to contain a portion of the liver fastened by adhesions; in the other, in which the operation was performed when the baby was three hours old, the sac contained intestine.

CLINICAL MEMORANDA.

PUERPERAL ECLAMPSIA IN A PRIMIPARA BEARING TWINS.

By F. M. THORNHILL, M.D.,
of Arcadia, La.

On the morning of January 29, 1893, I was sent for by Mr. L. to visit a young negress living on his farm, about two and a half miles from my office. The messenger informed me that the woman was in labor. I ordered my horse, and in a short time was on the way. Before reaching the place I met the husband of the woman coming to hurry me up, saying that his wife was having "fits." On arriving at the house I found the woman just recovering from a convulsion, and in a short time she was seized with another. As soon as practicable after the effects of the convulsion had passed off, I proceeded to make a digital examination. I found the womb and its contents high up in the pelvic cavity, and the os uteri dilated scarcely to the size of a silver quarter-dollar. I barely had completed the examination when the woman had another convulsion. I immediately gave her a quarter of a grain of morphin sulfate hypodermatically, and as soon as she could swallow, thirty grains of potassium bromid by the mouth, which had the effect of arresting the convulsions for an hour or more. With the cessation of the convulsions, uterine contractions also ceased and for about the same length of time.

During the calm I elicited the fact that the woman's confinement had been expected for several days, and that an old colored midwife (who was present) had been in waiting upon her for some time. The patient was a primipara, sixteen or seventeen years old, and had been complaining for several days with headache and vertigo, and on the morning of the day on which the seizure occurred, while in the act of rising from her bed, was seized with a convulsion and fell unconscious on the floor. After an intermission of an hour or so without any convulsions, and with the return of uterine contractions, she again commenced having convulsions—almost each recurring pain exciting a convulsion, notwithstanding the fact that I gave her frequently repeated large doses of potassium bromid, chloral hydrate, and morphin sulfate. At the same time I attempted to stimulate uterine contractions by the administration of ergot, and to hasten the progress of labor by artificial dilatation of the os, together with compression of the fundus of the womb through the abdominal parietes. The uterine contractions were very inefficient and dilatation of the os and descent of the head very slow. I had hoped by this course of procedure to be able to terminate labor naturally and favorably, without instrumental intervention; but the convulsions continued to recur with such increasing frequency, and the brain and nerve centers were being so rapidly overcome by them, that I saw labor would have to be terminated by instrumental interference, or else my patient likely would die undelivered. I accordingly despatched a messenger for professional assistance, pending the arrival of which I had recourse to chloroform-inhalations to control the convulsions. This had the effect of modifying the violence and shortening the duration of the paroxysms.

After a delay of some two or three hours Dr. A. and Dr. P. arrived. The woman had just had a convulsion when they entered the room. I suggested that we administer chloroform and deliver at once, if possible. An examination at this time revealed the fact that dilatation of the os was nearly complete. Dr. P. proceeded to administer chloroform, and when anesthesia had been produced, I attempted to apply the forceps. The presentation was that of the vertex in the first position. For some cause, which we at the time did not appreciate, I was unable to adjust the forceps, and after endeavoring to do so for some time without success, I turned the instrument over to Dr. A., who, after considerable effort, also failed. I again made an effort to apply the forceps to the child's head, and after considerable difficulty at last succeeded in doing so. We supposed then that we would have no further trouble in effecting a speedy delivery; but to our surprise and disappointment, when I had made traction on the forceps to the utmost of my strength, no progress was made, the head still remaining immovable. After tiring myself out in the effort to advance the head, Dr. A. relieved me, and after exhausting himself in a futile attempt to move the head, I again took charge of the forceps and applied traction with all the force I could safely exert, at the same time employing a rocking lateral motion upon the handles of the forceps. After considerable persistence I succeeded in delivering the head, and removed the forceps. After waiting some time for uterine contraction to begin, I hooked my fingers in the axillæ and proceeded to complete the delivery of the child, when I discovered that unusual effort was necessary. After a good deal of difficulty the child was finally delivered, but the umbilical cord was found to be not more than six or eight inches in length. This we at once concluded must have been one of the chief obstacles to descent of the head and natural delivery; but when we came to deliver the placenta it was discovered that there was another fetus in the uterus, and on examination the face was found presenting. We converted the presentation into one of the vertex, this being easily accomplished, as the genital canal had been dilated by the passage of the first child. We again applied the forceps and now delivered at once without difficulty. The cord was found coiled once or twice around the neck of the second child, and of about the usual length. Both children were contained in a common amniotic sac and placenta and were females, in accord with the doctrine that twins of the same sex are always developed from different centers of one and the same ovum and are contained in a common chorion, placenta, and reflexa.

When the delivery of the second child had been effected, we congratulated ourselves that we were done and were to escape any further complications in the case; but when we came to deliver the placenta we found it firmly adherent to the walls of the womb, so much so that the vigorous employment of Credé's method, together with forcible traction on the cord, were insufficient to remove it. I was therefore forced to introduce my entire hand into the cavity of the womb and insinuate my fingers between the placenta and the wall of the uterus and break up the attachments by sweeping the hand around the entire circuit of the uterine cavity in order to effect the dislodgment of the placenta. The womb contracted well after the removal of the mem-

branes. The woman afterward had two or three convulsions and did reasonably well for the next twenty-four or thirty-six hours; but at the end of this time septic metro-peritonitis set in and death took place about a week after the delivery. Both children were born alive and did well for several days, when one of them died from the effects of cold, from careless exposure. The other child lived until June 10th, when it died of catarrhal croup. The first child born weighed six or seven pounds, and the second one about five pounds.

A remarkable feature in this case is that both children should have been born alive, after having gone through such a terrible ordeal. Delivery was, however, accomplished without unusual injury to mother or children. After delivery had been completed and the true state of things was revealed, it occurred to me that the difficulty experienced in adjusting the forceps and in delivering the first child was due to the crowding of the face of the second child down against the neck and occiput of the first one, producing locking of twins *in utero* as it is termed in the text-books. This is a complication which it is said is rarely or never recognized before the birth of the first child. In this case in the midst of the excitement and confusion of the hour the possibility of a multiple pregnancy escaped my mind, and I made no investigation with a view of determining the existence of twins. Did I leave anything undone that should have been done or could have been done? Perhaps the advocates of blood-letting and veratrum veride will say that I should have had recourse to the use of these measures; but in anticipation of such criticism I desire to say that if those agents are ever valuable in the treatment of puerperal eclampsia I did not consider them applicable to the case here reported. There was an absence of arterial fulness and venous stasis, and the pulse was small and feeble. In conclusion I desire to say that I consider the prompt and skilful use of chloroform and the forceps more potent for good in the treatment of puerperal eclampsia than all other agents.

THERAPEUTIC NOTES.

By SOLOMON SOLIS-COHEN, M.D.,
of Philadelphia.
Professor of Clinical Medicine and Applied Therapeutics in the Philadelphia Polyclinic; one of the Physicians to the Philadelphia Hospital, etc.

V.

ETHYL IODID.

This drug, formerly known as *hydriodic ether*, is one of the most useful, but least used agents in the materia medica. Its vapor, mixed with air, is to be inspired. Its effects are those of iodin modified by ethyl. Extremely volatile, the methods by which it may be administered are the simplest. One needs but to hold to the mouth or nostril a vial containing the medicament, and inhale the vapor which the heat of the hand is sufficient to cause to rise. I usually prescribe half a fluid-ounce, which is about one ounce by weight, to be dispensed in an amber-colored bottle wrapped in dark paper, in order to protect the drug from the light. When the patient is moving about he can carry the little vial in his vest-pocket and take a few whiffs of the vapor from time to time. Under other circumstances it should be kept in a cool place, to avoid the decomposition that eventually occurs under the influence of even moderate heat. Some little care is necessary to see, in the first place, that the druggist dispenses a good preparation. Of several brands upon the market differing widely in price, both pharmacist and patient are likely to prefer one of the cheaper products, unless cautioned otherwise. The drug must be chemically pure, or it soon becomes worthless, and I know of but one brand, that made by a well-known German chemist, that can be relied upon. In the second place, the patient must not continue to use a preparation that has undergone decomposition from unavoidable exposure. So long as it is fit to use, the ether will remain light in color and retain its characteristic odor, which, to me, suggests horseradish. When the liquid has become deep-brown in color, or the odor has lost its pungency, the drug has ceased to be therapeutically active by inhalation.

The method described, while convenient and applicable in every nearly case, does not give accurate dosage. For the latter purpose, when deemed essential, five or six drops with a teaspoonful of water may be placed in a wide-mouthed jar, and the patient may inhale the air from the upper portion of the jar. The liquid ether, being heavier than water, sinks to the bottom, whence the vapor gradually rises, diffuses through the air in the bottle, and is inhaled. Ethyl iodid alone, or mixed with terebene, alcohol, creasote, chloroform, menthol, thymol, or any combination of these and similar agents, may be placed upon the sponge of a Yeo respirator and inhaled in that way, as described by me in The Medical News for October 11, 1884. As the drug is expensive and highly volatile, methods that restrict its diffusion through the atmosphere are, however, as a rule, to be preferred.

In any case in which the local effect of iodin upon the air-passages is desired, or in which it is necessary to get a constitutional iodin-effect, without resort to the stomach, the inhalation of ethyl iodid offers a convenient and effective means of accomplishing the purpose. It is thus of use in syphilis, and especially in cases of syphilitic inflammation or ulceration of the nose, mouth, and throat. It is of great benefit in tuberculosis of the larynx, and in pulmonary tuberculosis, at any stage of the disease, but especially when local stimulation and disinfection are desired. In subacute and chronic nasal catarrh, in some cases of hay-fever, in subacute laryngitis and subacute bronchitis, and in chronic laryngitis and chronic bronchitis, when a sedative, sorbefacient, and disinfecting agent is desired, inhalation of a mixture of equal parts of terebene and ethyl iodid gives most satisfactory results. Ethyl iodid is extremely useful in ozena and in fetid bronchorrhea. It has been employed with apparent benefit in asthma and in acute croupous pneumonia and acute broncho-pneumonia of various types. In one case of whooping-cough in an adult, it was apparently of service. It may be introduced into the Eustachian tube and middle ear by means of a Politzer bag and catheter.

To get the full benefit of the drug it must be used frequently and persistently. Thus, in cases of pulmonary tuberculosis I have had patients keep up the daily inhalation for two, three, or more years. While in cases of active disease, the inhalations are sometimes practised so

often as every half-hour, in convalescent cases, or in cases of tuberculosis not showing active progress of lesions, the intervals are proportionately lengthened. Two hours constitute the average interval. Three times daily are sufficient in some cases. Some patients can inhale the vapor of ethyl iodid for ten or fifteen minutes without experiencing unpleasant effects. Others feel slight vertigo after inhaling for a minute or two. Ordinarily, I tell the patient to inhale for five minutes, unless vertigo is produced.

JUGULATING GONORRHEA IN ITS INCIPIENCY BY MEDICATED TAMPONS.

BY R. N. PITTS, M.D.,
OF PITTSBORO, ALA.

MY experience has been very unsatisfactory in treating gonorrhea by means of injections and internal medication. In the great majority of cases the disease will, in spite of treatment, invade the prostatic portion of the urethra, the seminal vesicles, and the bladder. When gonorrhea attacks the deep urethral structures it is a mooted question if there are ever many cases cured. Gonorrhea is a disease that will not only cause the patient much concern, but will also often discourage the physician on account of his inability to cure.

It is my opinion that all flattering statements of curing gonorrhea by internal medication ought to be taken *cum grano salis*. The main point in treating gonorrhea by tamponing the urethra in order to be successful is to begin when the diagnosis is first made.

1. The first step to be taken is to have the patient urinate.

2. Wash out the urethra to a depth of four or five inches with warm boiled water.

3. Use a 4 per cent. solution of cocain if the urethra is very sensitive.

4. Slit the meatus, if it is not large enough to admit a steel sound as large as the urethra.

5. Introduce a metallic tube the full size of the urethra to a depth of four or five inches.

6. Introduce into the urethra through the tube a cotton tampon that has been saturated in a 1 : 20,000 solution of mercuric chlorid. Each tampon should be of full size, and have a silk cord tied to it, so as to hold it in position and to facilitate its removal.

7. Inject through the tube upon the tampon a few drops of the mercuric solution by means of a long aspirating needle and syringe. After the first tampon has been deposited in the urethra, draw out the tube just a little, and tampon and inject until the meatus is reached.

The strings on the tampons should be successively longer as the meatus is approached, so that they can be withdrawn in the inverse order of that in which they were introduced. If they become troublesome the tube may be withdrawn and reintroduced by their side.

The tampons ought to be kept in the urethra as long as they can be borne.

After the first tamponing there will be a thick, yellow discharge, which will have lost its virulence after a few tamponings. The tamponing ought to be done at least every seven days.

Between tamponings, the patient should be given a mild injection of plumbic acetate and morphin. Oil of sandalwood given by the mouth will aid materially.

It is my opinion that the *modus operandi* in treatment with the tampon is that it changes a specific into a non-specific urethritis which is easily cured by means of mild astringent injections. The average length of time consumed in the cure of eleven cases has been twenty-five days, with absence of sequelæ.

MEDICAL PROGRESS.

The Proteids of Nervous Tissue.—HALLIBURTON (*Journal of Physiology*, vol. xv, Nos. 1 and 2, p. 90) has found that the normal reaction of nervous tissues is alkaline. The alkalinity diminishes after death and may be replaced by an acid reaction. This is most marked where there are most cells, namely, in the gray matter. Quantitative determinations show that proteid matter is a very important constituent of nervous structures. The average amount of proteids in the solids of the gray matter is over 50 per cent. It is less in the white matter and in parts like the spinal cord, which contain large quantities of white matter. It is still less in nerves. The gray matter is also the poorest in solids ; nerves the richest. In any region, like the spinal cord, where there is a mixture of white and gray matter, it will be found that the percentage of water, the proportion of proteid in the solids and the proportion of gray matter vary directly the one with the others. Qualitative examination of this proteid matter shows that the proteids present are three in number. They differ in temperature of heat-coagulation, in the readiness with which they are precipitated by neutral salts and by acetic acid; one of them contains phosforus and is a nucleo-albumin, so differing from the other two, which are globulins. The most important characters of these proteids are the following: (*a*) This proteid is a globulin ; it may conveniently be termed neuro-globulin *a*. It is coagulated by heat at the low temperature of 47° C. (116.6° F.), and is analogous to similar globulins found in all cellular structures, such as cell-globulin *a* of lymph-cells, paramyosinogen or musculin of muscle, hepato-globulin *a* of the liver, and kidney-globulin. This proteid seems to be as constant a constitutent of protoplasmic structures as the nucleo-albumins are. It is precipitated by a comparatively small percentage of such neutral salts as magnesium sulfate. It is not precipitated by weak acetic acid. It contains no phosforus in its molecule. (*b*) This proteid is a nucleo-albumin. It can be readily prepared from nervous tissues by making a saline extract, but under these circumstances it is mixed with the other proteids. Attempts to obtain it by the sodium-chlorid method fail. It may, however, be prepared in large quantities by precipitating an aqueous extract of brain by weak acetic acid. The supply obtainable from white matter is small. It is coagulated by heat at a temperature of from 55° C. (131° F.) to 60° C. (140° F.). Like globulins it is precipitable by saturating its solutions with neutral salts ; but more salt is necessary than in the case of neuro-globulin *a*. It contains 0.5 per cent. of phosforus. After subjection to gastric digestion an insoluble residue of nuclein remains behind. Dissolved in dilute sodium carbonate and injected into the vascular

system of rabbits it causes extensive intra-vascular coagulation. (*c*) This proteid is a globulin. It may conveniently be called neuro-globulin β, and is closely analogous to the hepato-globulin β of liver-cells. It is coagulated by heat at from 70° C. (158° F.) to 75° C. (167° F.); it is precipitable by neutral salts, but requires complete saturation with magnesium sulfate to precipitate it entirely. It is not precipitable by weak acetic acid, like the nuclein just described, and contains no phosforus in its molecule. Peptone, proteose, myosin, albumin, and fibrin-ferment are not obtainable from nervous tissues.

Perforating Appendicitis with Unusual Symptoms.—CABANES (*Montpellier Médical*, 1893, No. 4, p. 618) has reported the case of a man, twenty-three years old, who came under observation in an attack of measles. He was of robust appearance and had a good family history. Some ten months previously he had had an attack of enteric fever. The attack of measles pursued an uncomplicated course. On the thirteenth day, as the man was about to be dismissed, he was suddenly seized, after supper, with vomiting and a feeling of general malaise. Investigation disclosed the fact that for two days there had been looseness of the bowels, which the patient had concealed in order to escape a restriction of his diet. The general aspect was one of depression, with dyspnea, anxiety, elevation of temperature, and acceleration of pulse. Examination occasioned great distress. The abdomen was relatively soft; there was some gurgling; there was complaint of general abdominal pain, with special localization in the hypogastric and lumbar regions. On percussion, dulness was elicited over the bladder, but the catheter brought away only a few drops of urine. A boric-acid injection was easily made, the fluid returning through the catheter. The symptoms gradually became more profound; the vomiting continued; the anuria persisted; the diarrhea was troublesome. The patient occupied the dorsal decubitus. From time to time, however, he would abruptly turn upon his left side, as if to relieve intense pain, but soon returned to his original position. The dyspnea became intense and the small pulse reached 136 in the minute. The deep temperature rose to 104°, while the extremities became cyanotic and cold. At this stage the patient became unconscious and death supervened. Upon post-mortem examination, the thoracic organs were found quite healthy. The intestines were distended with gas, but otherwise presented a normal appearance in their upper part. The lower portion of the bowel, however, was hyperemic and presented disseminated areas of redness. Loops of small intestine occupied the pelvis, where they were bathed in a sero-purulent effusion, in which the vermiform appendix, which was seven inches long, was found floating. The organ was attached to the inner aspect of the cecum at the level of the superior pelvic strait and a little in front of the right sacro-iliac articulation; by its free extremity it was attached to the right aspect of the rectum by a band of mesentery. The mesentery was thickened at the lower extremity of the appendix, which itself was swollen to the thickness of a thumb. Upon the anterior surface of this extremity was a perforation as large as the head of a pin. The opinion is expressed that the antecedent attack of enteric fever may have had a predisposing influence in the development of the conditions found, a state of muscular atony permitting the entrance into the appendix of irritating and toxic matters.

Puerperal Eclampsia Treated by Bleeding and Gavage with Milk.—MAYGRIER (*Journ. de Médecine de Paris*, 1893, No. 29, p. 350) has reported the case of a primipara, twenty years old, in which with the onset of labor at term intense headache set in, at first intermittent but subsequently continuous. The lower extremities were edematous; vision was impaired, and there was pain in the epigastrium and dyspnea. In the midst of these symptoms an eclamptic attack took place, shortly followed by others, vomiting occurring in the intervals. A large proportion of albumin was found in the few drops of urine that could be obtained from the bladder. The presentation was left occipito-anterior. The os uteri was dilated to the size of a silver quarter-dollar. The fetal heart-sounds could not be heard. An enema containing a dram of chloral was only partially retained, but was followed by no amelioration. In view of the gravity of the situation, with the anuria, the coma and other evidences of profound intoxication, thirteen ounces of blood were withdrawn from the right median cephalic vein. The coma was not modified. The labor, however, progressed rapidly. As soon as the cervix was sufficiently dilated, the membranes were ruptured and a dead child was expelled, the placenta following shortly afterward. There was no noteworthy post-partum hemorrhage. Two hours after the delivery the sixteenth convulsion occurred. The bladder still contained no urine. In the absence of the apparatus for subcutaneous transfusion of artificial serum or a physiologic saline solution, gavage with milk was instituted. As it was impossible to separate the patient's teeth, the tube was passed through the nares, five ounces of milk being introduced into the stomach every hour. In the course of two hours an ounce of highly albuminous urine was found in the bladder. Thereafter the quantity of urine progressively increased, while the proportion of albumin grew progressively less. The coma also gradually became less and less profound and the respiration less embarrassed. To further stimulate the secretion of urine a bath was given in water at a temperature of 100.4°, and followed soon after by a purgative enema. The woman now became conscious and able to swallow the milk. The swelling subsided; the albumin disappeared from the urine; the headache was no longer felt, and the woman was soon convalescent. Upon recovery it was found that she had no memory of the events of the eight or ten days preceding labor, while the memory of events during the previous two or three months was distinctly impaired.

Dilatation and Hypertrophy of the Colon Fatal at the Age of Eleven Years.—WALKER and GRIFFITH (*British Medical Journal*, No. 1700, p. 230) have reported the case of a boy, eleven years old, in which nothing unusual was noticed at birth, but within a few weeks the abdomen was observed to be unusually large. This enlargement gradually increased until it reached an enormous degree. There was little pain, but the bowels were usually constipated. The appetite was poor, breathing was embarrassed, muscular development was feeble, and the health varied with the degree of distention.

From time to time flatus would escape from the anus, with marked diminution of the swelling. Toward the close of life the boy suffered a good deal of pain, and wasted considerably. He died suddenly while an enema was being administered. At the post-mortem examination the body was found much emaciated, the lower part of the thorax being greatly expanded, and thrown upward. On opening the abdomen nothing was seen but an enormous coil of intestine, which proved to be the transverse and descending colon, measuring twenty-three inches in circumference. The excessive dilatation extended to the sigmoid flexure, gradually diminishing, and leaving the rectum normal. The colon gradually became narrower toward the cecum. No constriction could be found. The small intestine was normal throughout its entire extent. Ascending and descending colon both had distinct mesenteries. There were no adhesions or other signs of an antecedent peritonitis, although the peritoneum was extraordinarily thick. The distention of the abdomen had caused the lower part of the thorax to be spread out and thrown up. The back of the diaphragm being fixed, the anterior edge was tilted up, so that the inferior surface of the liver looked directly forward. The distance from the supra-sternal notch to the top of the diaphragm was about two and a half inches, the lungs and heart being compressed into an entirely inadequate space. The immediate cause of death was concluded to be the embarrassment of the enfeebled heart's action by the distention of the abdomen. Histologically the mucous and muscular coats of the affected bowel were found to be greatly thickened, with atrophy of the secreting structure. The sequence of events was supposed to be a chronic colitis, with undue formation of gas and secondary thickening of the walls of the bowel.

Congenital Hemophilia; Fatal Hemorrhage from the Conjunctiva—MÜLLER (*Archiv für Gynäkologie*, B. xliv, H. 2, p. 269) has reported the case of a female infant of a primipara, born at the end of the ninth month and measuring 17.25 inches in length and weighing four pounds. Following labor, one drop of a one per cent. solution of argentic nitrate was instilled into each eye. On the afternoon of the same day a scanty white discharge was observed about the eyes, unattended, however, with swelling or other change in the lids. With the possibility of a blennorrhea in view, a second drop of the silver solution was instilled into each eye at night. Even before this was done the ocular secretion was already noted to be blood-tinged. On the following morning the eyelids were found covered and closed by blood-clots, upon the removal of which a few drops of red blood welled up between the closed lids. Neither lids nor conjunctiva presented any injury or any change (swelling, redness, slough), but upon the conjunctiva there appeared one drop of blood after another, although the source of hemorrhage could not be discerned. The bleeding persisted in spite of repeated irrigation and the frequent application of ice-compresses. At night on the second day a compressive bandage was applied. Careful and skilful examination failed to disclose any lesion about the eye; neither could any lesions of the adjacent mucous membranes be detected. The bandage was continued and irrigation with chlorin-water was added, but the hemorrhage would not yield. On account of the delicacy of the structures and in the absence of bleeding points it was not deemed justifiable to apply a solution of ferric chlorid or the actual cautery. The child remained fairly bright until the third day, taking its nourishment from the mother's breast, despite the persistence of the bleeding. Finally, however, the anemia became so profound that death took place on the evening of the fourth day. The post-mortem examination disclosed the existence of no gross lesion, but only the appearances of general anemia. Müller adds that in another case of the same kind he would practise subcutaneous or intra-venous transfusion and close the lids by means of a continuous suture.

Extirpation of an Hypertrophied Spleen.—TREUB (*L'Union Médicale*, July 13, 1893, No. 6, p. 65) has reported the case of a woman, forty-eight years old, who had borne seven children and had aborted five times. Seven years previously, ten weeks after delivery, she was seized with abdominal pain, which had continued with varying intensity and was less upon activity and worse upon recumbency. The pain was continuous; when it was at its worst the abdomen would become distended and the urine would be passed in drops. The distention of the abdomen was said to occur regularly every spring and autumn. Menstruation was profuse but regular, and unattended with pain. The last menstrual period had been followed by feverishness, abdominal pain, and nausea and vomiting. On examination of the abdomen an oblong tumor of irregular surface and solid consistence was found in the median line. The mass was movable laterally but not vertically, and extended upward to the level of the umbilicus; it was distinctly circumscribed laterally and superiorly, but was lost in the pelvis below.

On bimanual examination the tumor was found to be situated in front of the uterus, which was slighly enlarged, and adherent by its anterior surface. The liver occupied its usual position. The right ovary could be doubtfully felt, the left not at all. A diagnosis of cyst of the left ovary was made and celiotomy undertaken. The tumor was found adherent to the abdominal wall anteriorly and covered by loops of adherent intestine. The pelvic peritoneum gave evidence of inflammation. The ovaries were edematous and covered by fibrinous deposits. In color and form the freed mass resembled the liver, but this organ proved upon direct palpation to be in place. It was also thought that the spleen could be felt; so that it was concluded that the tumor was a neoplasm of the kidney. The pedicle was tied and the mass removed. Examination of the body showed it to present histologic structure of an hypertrophied spleen, partially necrotic and in process of further destruction. Recovery was interrupted. Three weeks after the operation the woman was dismissed. At no time was there any evidence of leukemia.

Rumination in Man and its Relation to the Act of Vomiting.—From a study of four cases of rumination in man and a survey of the literature upon the subject, SINGER (*Archiv für klinische Medicin*, Band li, Hefte 4 u. 5, 472) maintains that a distinction cannot be made between rumination and regurgitation, both, as observed

in human beings, being the expression of a nervous constitution. The immediate cause of the act is a relative insufficiency of the cardia, which manifests itself intermittently and is related to the quality and quantity of the contents of the stomach. The mechanism consists in the aspiration of the gastric contents by the exhaustion of the air in the thorax at a time when the cardia is relaxed, this exhaustion being maintained by the inspiratory position of the chest, with simultaneous closure of the glottis. The process may be restrained by forced expiration. The cardiac antrum corresponds to a demonstrable dilatation of the esophagus in its cardiac portion and is a result of mechanical over-distention from the swallowing of large boluses of food. It furnishes the anatomic basis for the defective closure of the cardia. Rumination is physiologically to be distinguished from vomiting; the only condition that can be compared with rumination is the esophageal form of nervous vomiting. The state of the gastric functions is variable and is but an accidental feature of the symptom-complex of rumination; abnormalities of secretion are but the result of the neurosis upon which the rumination itself depends and only require symptomatic treatment. Rumination occurring in cases of esophageal diverticula and total dilatation of the esophagus is to be differentiated from genuine rumination by the conspicuous difficulty in swallowing and the retching that attends the regurgitation; in the case of a diverticulum the pepsin and the rennet-curdling ferments are absent. The treatment of rumination must be based upon the neuropathic disposition and upon individual conditions. It is important to abjure hasty eating and excessive drinking and to enjoin the voluntary suppression of the act. As an adjunct measure, tonic treatment, calculated to increase the tonicity of the cardia, is to be instituted.

Bronchial Casts in a Case of Mitral Regurgitation.—Lawrence (*Lancet*, No. 3648, p. 247) has reported the case of a boy, nine years old, who some nineteen months previously had an attack of "inflammation of the heart." Thereafter there had been weakness and an inability to keep up with school-work; but no dyspnea or cough. The child was small and poorly nourished, his skin harsh and dry. At the apex of the heart a loud systolic murmur was heard, but nothing abnormal was detected in the lungs. A short time later the child was reported to be spitting up "queer things like little trees," which upon examination proved to be bronchial casts. Just below the angle of the left scapula a small patch of consolidation was detected. The expectoration of the casts continued from time to time, one or two being ejected daily for several days and then none for a month or so. The casts were white and occasionally streaked with blood, which could be readily washed off. Sometimes they were not perfectly round on section, but flattened as if the individual cast had not completely occluded the bronchus. The expectoration of a cast was preceded for some hours by a tickling cough. Ascites and a left inguinal hernia developed. The area of consolidation previously present could not be found, but there was a new area of similar size in the second right intercostal space. There was no dyspnea or pyrexia. Treatment by rest in bed and the administration of strophanthus and nux vomica was followed by general improvement, but the area of consolidation increased in size until finally the whole upper lobe of the right lung became solid. Now the respiration became accelerated and the temperature elevated. Cough was troublesome and expectoration copious, the expectorated matters consisting of bronchitic froth and shreds of dirty-white material. Emaciation and weakness progressed, and amid the signs of pulmonary congestion and edema death took place. An autopsy could not be had.

Symptoms Caused by the Electric Light.—Freeland (*British Medical Journal*, No. 1700, p. 234) has reported the case of an electrician, who was suddenly seized with intense pain in both eyes and severe headache. The eyes were suffused and the conjunctivæ congested. There was marked photophobia and partial blepharospasm. The skin was hot and dry. The temperature was 102°. The free instillation of a five per cent. solution of cocain was soon followed by a subsidence of the pain and a desire to sleep. After little more than an hour, however, the man became wildly delirious. The administration of fifteen grains each of potassium bromid and chloral was followed in half an hour by quietness and sleep. An ice-bag was applied to the head. The man slept for several hours, meanwhile perspiring quite freely, and on awaking felt much refreshed and was quite rational, although somewhat shaky. The pain in the eyes and head had gone, but the eyes were still suffused and injected and intolerant of light. The temperature was normal and the skin moist. The man was kept in a dark room for the remainder of the day, and on the following morning was able to resume his usual occupation. It was learned that he had had charge of a powerful electric search-light and had neglected to wear protective goggles.

Changes in the Urine after Administration of Thyroid Extract.—Ord and White (*British Medical Journal*, No. 1700, p. 217) report the result of observations in a case of myxedema in which twenty drops of a glycerin extract of the thyroid body of the sheep (an equivalent of one-sixth of a gland) were administered daily, the conditions before and during the experiment being otherwise the same. It was found that the urine was increased in volume; that the nitrogen excreted in the urine exceeded the total quantity of nitrogen in the ingested food; that the elimination of phosphoric acid and of chlorin was practically unaffected; that the increased excretion of nitrogen was chiefly in the form of urea; that the body-weight rapidly diminished; and that the body-temperature was raised.

A Bullet in the Orbit for Twenty-three Years.—Roose (*Rev. gén. d'Ophthalmologie*, 1893, No. 7, p. 309) has reported the case of a man, fifty years old, who related that he had lost his right eye in the battle of Sedan in 1870, in consequence of an injury from a fragment of a shell. The patient complained of some pain, and the stump presented an appearance of redness. Examination disclosed a metallic body at the fundus of the orbit, and upon the patient being anesthetized a leaden bullet, almost an inch long and weighing more than an ounce, was removed. The visual acuity in the remaining eye was normal and the fundus presented no lesion.

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IN SOCIETIES AND CONGRESSES LET US HAVE LESS "SCIENTIFIC WRITING" AND MORE PRACTICAL WORK IN PREVENTIVE MEDICINE.

IT is as important for human progress that the science already gained should be made practical, brought to effective use by the people, as it is that new science should be acquired. One may even question if it is not more important, just as in ethics the greatest need is not that we should know more accurately what is right, but that we should better practise that which we already know. With medicine it is as with every other science—it is easier, at least more common, to strain after unacquired truth than it is to bring down to work-a-day realization and use the truth we have long since gained. Hence we have to deplore the very palpable fact that the meetings of medical men are almost entirely given to the reports of theoretic and acquired medical truth, to the entire neglect of the application to humanity's daily needs of the knowledge that is certain and that should be made to yield good results if put to use. At our congresses there are endless papers on the theory, diagnosis, and treatment of individual cases of produced disease when these cases shall be presented to the physician; but there it all ends, except in so far as the individual physician is concerned, and the members return to their work to await the specific cases of disease that may turn up.

In this, two things are forgotten—the duty physicians owe as a profession to the community as a whole, and the duty they owe to their profession to increase its dignity and prestige. Preventive medicine and hygiene, the education of the community in the knowledge and the practice of the laws of health, are duties sadly neglected by us. There is a beginning in this respect, it is true, an awakening perception, but it is so far only feeble and inconstant—no virile grasping with the stubborn reality. At the last meeting of the Ophthalmologic Section of the American Medical Association a committee was appointed to draft and secure the passage of State laws to prevent the appalling unnecessary number of cases of blindness due to ophthalmia neonatorum. This committee has undertaken the work with energy, and the results of its action will ultimately be of incalculable good. Some State societies have instituted working committees with similar motives and methods as regards the prevention of other diseases, but we here plead for a tremendous extension of the plan, and a radical change of the usual theoretic meetings that end in talk, into consulting and determinative gatherings largely devoted to the needed work of planning and carrying out practical medical work in every community.

Every medical society, local or general, should organize committees with some definite practical work before each for which the members are peculiarly fitted, and whose action should be pronounced upon by the committee of the whole. There are hundreds of legislative reforms and needed advances that only await the authoritative action of corporate bodies of medical men to insure the respectful attention and indorsement of our legislators. The question of pure, germ-free milk, for example, will never be settled until the profession speaks clearly and acts authoritatively about it. The secret-nostrum traffic and the unpatent patent-medicine disgrace can never be stamped out except by our common determination and united action. The hordes of despicable quacks that sprout like ill weeds in our unploughed fields, will never be rooted out unless we act. The doubtful and poor immunity we now have against cholera by means of Governmental control of quarantine has been made possible almost alone by the action of one or two societies of medical men. Every city has its pecu-

liar unhygienic scandals, wretched sewerage, polluted water, cobble-stone pavements, death-bringing unnecessary noises, hospital abuses, proprietary medical colleges, etc., that should be stigmatized with the condemnation of medical societies, and remedied by their antagonism.

The summarization of the whole suggestion lies in the teachings of cool-headed statisticians and their figures. According to our death-rate there are annually occurring in a city like Philadelphia, *i. e.*, in every million inhabitants, something like 2000 or 3000 unnecessary deaths. These deaths are due to criminal negligence. Now, more than this, according to DR. FARR, for every death there are on an average three years of sickness. It is not primarily or chiefly our fault that these 2000 useless and expensive deaths take place and the 6000 years are uselessly and continuously wasted. But it is our duty and our privilege to stop it all. Instead of only trying to cure the person after he is sick, instead of trying to prevent the single death by pulmonary tuberculosis, it is also our high function to prevent all the sickness possible and all the pulmonary tuberculosis whatsoever, and so all the needless deaths. Let us destroy the bacilli instead of merely writing papers about them.

The undertaking of such work by medical societies is also needed for other reasons. There are few professional evils more evident than that of the aloofness of medical men as a body from their lay fellows. It is at present difficult or impossible for the ordinary citizen, however intelligent, to get any adequate or sympathetic comprehension of our aims and methods. Enlistment in these commendable practical hygienic measures will serve to bring physicians and their fellow-men into a desirable community of understanding and mutual respect.

It is also one of the best methods of out-rooting quackery of all kinds. The scandalous condition of legislative indifference to medical reform, the diabolism of legislative control by the quacks, all this and more awaits our united practical protest. We can stop it if we will. When the community sees a united band of men unselfishly working for its welfare, sympathy and support will at once come to that band, and the self-seeking will be left to peddle their homeopathic pillules, offer their infallible secret nostrums, or otherwise pander to the fads and foibles of the little remnant of magic-mongerers who will always be with us to remind us of the barbarism whence we have emerged.

DANGER FROM CANNED GOODS.

SUGGESTION of danger from canned goods is not new to sanitary literature. Considerable attention has been paid to the subject both in this country and in Europe, yet beyond showing by qualitative tests the occasional presence of some of the less dangerous metals, no very extended results have been obtained. The French sanitary authorities have discussed at some length the extent and effect of the employment of copper in greening vegetables, but, in spite of this, the exact effect of this practice is in doubt. HEHNER, a well-known English food analyst, made in 1880 a series of analyses of both meats and vegetables, with the result that in many cases tin was found dissolved in the food. He also studied the effect of tin salts on animals, but the doses used were rather large. It has been noted in all investigations that unless the quantity of lead in the plate or solder be large, tin is dissolved in larger amount—a fortunate circumstance, for this metal is far less dangerous than lead.

Accurate and extended information of interest not only to the sanitary chemist but to the physician is, however, furnished by a recently-issued bulletin of the United States Department of Agriculture, in which are given not only the results of tests for metallic impurities and artificial preservatives in many brands of canned vegetables, but also determinations of general food value. The information furnished is anything but pleasing. Deliberate adulteration, and inferiority in quality are frequent. Salicylic acid and sulfites are freely used, obviously to cheapen the process of manufacture by permitting less care in sterilization. Even the material from which the cans are made is often impure; some samples of the plate showed over 11 per cent. of lead.

Four metals—copper, zinc, lead, and tin—possessing greater or less degrees of toxic power, are found in canned goods. Copper is frequently directly added to give to the vegetables a good green color, especially in peas. In thirty-eight samples purporting to be foreign, copper was found in thirty-six. American peas were not so largely colored; thirty-two out of forty-three samples contained either no copper or very small quantities. Noteworthy quantities of zinc were found in some cases, this being used in a greening process the details of which are not published. Zinc chlorid used in the soldering is also a cause of contamination. Tin is, of course, to be expected, but is found in varying amount. There is so little clinical information as to the

effect of repeated small doses of tin, that a judgment can scarcely be passed on the analytical data in this prospect. With regard to lead no doubt exists. It is probably the most insidious and frequent cause of chronic metallic poisoning. It is introduced into canned goods not only by the solder but also by the use of inferior grades of tin-plate. The adulteration of this article has been alluded to above. It appears also that an appreciable amount of solder often exists in such a finely divided form that it cannot be separated from that in solution, but it may be a question whether such suspension will not be capable of causing chronic poisoning. Not the least interesting and important source of lead is from the rubber rings used in completing the sealing of glass jars. Lead compounds, sulfate, oxids, and carbonate are largely employed in the preparation of rubber goods, and consequently the glass can, which is otherwise so satisfactory a substitute for the tin, becomes in practice a source of even greater danger. Glass bottles with lead tops are used by some firms, and one brand of French manufacture showed in the same bottle about twelve milligrams of lead, fourteen milligrams of copper and an unusually large amount of salicylic acid. The report gives elaborate data as to the food value of the various brands. It is not necessary to discuss this question in detail, and it will suffice to say that the results all indicate clearly that canned goods are most expensive forms of food.

The antiseptics found were salicylic acid, acid sulfites, and salt, the latter partly as a condiment, though occasionally in large amount. It is scarcely worth while to discuss the sanitary relations of the first two. Whatever may be thought of their direct action it is evident that their very function as antiseptics depends on their power to interfere with the actions of microbes and enzyms, and hence with digestive actions. There seems to be no doubt that their employment should be forbidden. Further steps should be taken to prevent the use of adulterated tin-plate or rubber washers containing lead compounds. These conditions represent the most serious phases of an industry which has arisen within this generation, and has reached an extent that is astounding to those who have not followed its development. With the evidence presented by this report, covering as it does only part of the field—for canned meats, catsups, and other classes of preserved food remain to be examined—some idea is formed of the extent to which chronic poisoning and digestive derangements are brought about. It is depressing also to note the indifference which manufacturers show concerning the quality of their goods.

EDITORIAL COMMENTS.

Local Quarantine.—The decisions on the subject of quarantine, other than those touching the quarantine of vessels, have been found by research to be very few indeed. The increasing attention which is almost everywhere being given to the subject of health, however, makes anything determined with regard to it very important. For these reasons, the recently rendered opinion of the Supreme Court of South Dakota in the case of State *v.* Butts (19 L. R. A. 725) is of much interest. Butts was convicted in the County Court of breaking a quarantine order of the County superintendent of health, which order and quarantine regulation prohibited him from leaving his own residence until further orders or permission of said superintendent of health, he having gone from his house upon the public streets, thereby exposing the public, as it was alleged, to the danger of a contagious and infectious disease—diphtheria But the judgment of the lower Court was reversed, because the Supreme Court said that the openly going from his residence upon the public streets did not make the accused a criminal offender against the quarantine order, unless he knew of its existence, while it was not alleged in the information that the order was served upon him or that it was in any way brought to his knowledge, directly or indirectly. All the matters charged in the information might indeed be proved and yet entirely fail to show the guilt of the accused, because his guilt would depend upon his knowledge that the act was prohibited, and was therefore wrong. Such an order is unlike a law, knowledge of which is charged against everyone. The order might have been duly and properly made, and after it was so made the accused might have done the very thing which the order prohibited and still be innocent of offence, unless he knew of such prohibition. Going from one's residence upon the public street is ordinarily an innocent act. To make it criminal, it must be done within knowledge, either actual or imputed, that it has been authoritatively forbidden.

The Index Medicus.—The completion of the first twelve volumes of the *Index Medicus* afforded the publisher and editors an opportunity to give a revised list of the medical journals and transactions regularly indexed for this publication. We have gone to some trouble to count these in order to give the imagination a help in realizing the vast literary labor of a serial character carried on by the profession. Leaving out those of a semi-scientific, purely commercial, or popular order (these will make up for some in the list not accurately or wholly "medical"), we are astonished to find the total number is 1119!

The medical profession should at least acknowledge the debt of gratitude due the editors of the *Index Medicus*, Drs. Billings and Fletcher, but more especially due the publisher, Mr. Geo. S. Davis, who nobly persists

in paying the heavy expenses of the publication with little hope that the few subscriptions will ever equal the outlay. Such an action deserves unqualified thanks, though coupled with shame in confessing that, while we can support hundreds of so-called medical journals, we have to be the recipients of a charity (however willingly given) for the execution of a work so scientific and so useful to every literary medical man.

A Disgrace to the Exposition.—At the headquarters of the Homeopaths in the Exposition Grounds at Chicago, a notorious advertising firm has located itself and makes the Exposition a means of advertising its business. Both from these headquarters and far and wide it sends notices like these: *Rupture Cured or No Pay and No Pay until Cured. No Detention from Business. No Operation. Examination Free. The E. O. Miller Company, Homeopathic Headquarters, just west of the Woman's Building, World's Fair Grounds, Chicago.*

The Medical Century (a homeopathic publication), with commendable honesty, is ashamed of this, but confesses that the firm subscribed to the building on condition that it should have the place given it, and that one of the directors is the "attending surgeon" of the Miller Company, as also a member in good standing of the American Institute of Homeopathy.

The Universal "Shot-gun" Elixir!—That excellent serial the *Provincial Medical Journal*, in commenting on the multiplication of fluid extracts and other preparations of animal glands and tissues, suggests that the modern therapeutists imitate Shakespeare's prescription, as given by the Witches in "Macbeth:"

> "Round about the cauldron go;
> In the poisoned entrails throw," etc.

and in place of administering single remedies, use compound ones, placing in one cauldron, with due antiseptic precautions, the extracts of testicles, ovaries, brain-tissue, pancreas—all the *-ines* that modern medical atavism has imagined, so that we shall always be able to hit the mark, some one of the miraculous remedies going straight to the affected organ and rejuvenating it for a new life-work!

Opium in the New Pharmacopeia.—The strength of opium preparations as prescribed in the new pharmacopeia is slightly different from the requirements of the pharmacopeia of 1880. Powdered opium is to contain from 13 to 15 per cent. of crystallizable morphin—from 12 to 16 per cent. having been the former standard. The average remains the same, but the limits of variation have been reduced. *Acetum opii*, *tinctura opii*, and *tinctura opii deodorata* are each to contain one gram of opium of from 13 to 15 per cent. morphine (cryst.) in ten cubic centimeters, a slight reduction in the strength of the vinegar, a slight increase in that of the tinctures. *Tinctura opii camphorata* is to be one gram in 250 cubic centimeters, instead of one gram in about 257 cubic centimeters. These changes are all improvements.

Dr. Reeves and "The Amick Cure."—Dr. James E. Reeves, of Chattanooga, Tenn., has been arrested on a warrant sworn out by Dr. Amick's representative, on the charge of sending defamatory matter through the mails, and is bound over to Court under bond of $1000. Dr. Reeves says he is not in the least disturbed and that he shall go on with his exposures "though there may be as many devils in the way as there are tiles on the houses of Chattanooga." "I welcome the opportunity to expose the whole thing and make a Waterloo of it. I have twenty-one letters from people whose names appear in the Amick pamphlet showing the cure to be worthless."

Alligatorine is the latest! The homeopathists have beaten us. They have made the toad and the fox yield "most valuable therapeutic products," and now the prepared fat of the alligator, "saponified by alcoholic potash, the soap decomposed by hydrochloric acid, and the fatty acid mixed with cotton-seed oil," is highly recommended. Has any daring investigator prepared any extracts from the brain of our long-eared, four-footed friend, the ass? The balloonists and those afflicted with mountain sickness should get some extract of eagle's-wings, and surely mole's blood or flounder serum would at once cure caisson-disease.

The Struggle for Pure Water in Sacramento.—The *Occidental Medical Times* has done the profession an honor and the public a great service in publishing a special number, or pamphlet, devoted entirely to the question of the pure-water supply of Sacramento, and looked at from every standpoint—economic, sanitary, etc. Those interested in such questions should see and imitate the labors of Dr. Parkinson and his co-workers, lay and professional—to whom, congratulations!

Microbes in the Mails.—PROF. UFFELMAN, of Rostock, Germany, sent a letter infected with cholera-bacilli through the mails, and the bacilli were found alive twenty-three and one-half hours later. On postal cards the microbes lived twenty hours in the mail-bags. On coins they died more speedily. Of what use was the dangerous experiment? The moral of these experiments is said to be obvious. The immoral is glaring!

Shorten the Nomenclature!—

> "Who says convolution,
> When he might say gyre,
> Would cry conflagration!
> When he might shout fire!"

SPECIAL ARTICLE.

MEDICAL EDUCATION.

An Address before the Harvard Medical Alumni Association, June 27, 1893.

BY J. M. DA COSTA, M.D., LL.D.,
OF PHILADELPHIA.

I HAVE often asked myself why it is that medical education is so discussed by the profession, why this never-ceasing upheaval. We do not see the education in law, we do not see the education in theology, a matter of constant dispute and agitation. And I have concluded that the keen interest, the deep feeling, which it

engenders, is really due to the state of medicine itself. The agitation is but a sign of the unrest in medicine we see everywhere. It is but a recognition of the spirit of research and investigation that is so conspicuous now, of the enthusiasm that is constantly adding new facts, almost new sciences. Medical education must be discussed, must be recast, since the groundwork on which medicine stands is being from day to day enlarged and strengthened. Let us, therefore, after all, be glad that the subject attracts so much attention. It attracts attention because medicine itself is a most progressive science.

We cannot congratulate ourselves on the state of medical education as it existed in this country some years since. There were, as there are now, many earnest and eloquent teachers; but the wretched system of going over the same ground year by year, the total inadequacy of the time allowed for preparation, the utter lack of laboratory and hospital facilities, made the condition of medical education a reproach instead of a subject of honest pride. Now it is becoming vastly different. There is, indeed, no self-respecting medical school which can stand the pressure of public opinion and go on in the forefatherly ways. The sacrifices, the struggles, of Harvard and of those great schools that stood by her side in honest rivalry, schools that appreciated the inherited wants of the past and the needs of the present, have not been in vain. They have done what the profession of medicine wanted them to do, and have done it splendidly.

The chief difficulty in making a high standard universal lies in the number of the medical colleges. It is, indeed, a sorry admission that the medical schools in this country are the greatest enemy to medical progress, not in themselves, but in their number. Some years ago there were nearly three hundred. Now there are not far from one hundred and fifty; and they are dying at about the rate of three a year, without, it must be said, many mourners. A further reduction would be a national benefit. The reason they constitute in their number a bar to medical education is not only that in their struggle for existence the feebler ones tend to keep the general standard down, but that it is utterly impossible that all can keep pace with the requirements of modern medicine. How can all have well-equipped laboratories? Where can the clinical work be done on which the medicine of the day depends? The remedy lies in their amalgamation. Let the absurdity cease of small towns having three, four, six, of these struggling institutions, no one of which can have a vigorous life. The remedy also lies in the profession—in the stand taken by potent representative bodies and their authoritative action, in public opinion discountenancing the establishment of medical schools except where the development of the country proves them to be imperatively needed in fresh growing centers. Thus in time the preposterous disproportion of medical schools as compared with schools of law, of divinity, of engineering, will cease; and it will come to be recognized that there is nothing about medicine that calls for such a profusion of teachers.

There is now all over the country a growing disposition for the universities to take charge of medical teaching, and to develop their medical departments with all the zeal they give to the others. We see it in Michigan, we see it in California and Colorado, we see it in Louisiana and in Texas, as strikingly as in our Eastern States. There is nothing but good in this. The power, the means, the spirit, of the university, go out to its branch. The university, in turn, gains by the reputation of its medical faculty, and by the recognition that medicine is an essential part of the new learning which leads on to the highest attainable civilization. Thus both are benefited. The future of medical education certainly lies in the universities, and in such great schools as can vie with them in clinical and other facilities.

But, as this state of things becomes more and more general, and the weak colleges disappear, the university has increased obligations. It must encourage, it must satisfy, the legitimate ambition of those who wish to become teachers, and who prove their aptitude. Throw open the doors as widely as possible, grant the use of the lecture-rooms, attach men of rising prominence to the university, accustom them to look upon her as their true mother. You need not fear. You will not have too many. Students are keen critics. It will be a survival of the fittest at the end.

You have in this great school adopted a four years' course. I observed a rivalry here between you, Mr. President, and you, Mr. Chairman of the Committee on the Medical School, who should be the one to announce its success to this Association. I am sure that there is not a member present who would not like to be in either of your places, and make this announcement; for it is one of great gratification to every member of Harvard, to every member of the whole profession in the United States. I am equally sure that, should the time come when Harvard calls for a fifth year, its loyal alumni would at once respond. Do not, however, understand me as thinking this necessary or even desirable. I believe that for the present you have done enough, and that the curriculum is sufficiently extended. I hope to see the advance in medicine, or rather, I should say, in medical education, going on at the other end. I want to see trained minds enter on the study of medicine. It is so much easier for a teacher to speak to, and to instruct those who have had good mental training. It is frightful to talk in an uphill manner to men—fortunately, now a diminishing proportion in medical classes—who are unaccustomed to thinking, and who show in their faces that they have to labor to understand. Therefore, I say again, that it is to the beginnings that we must look. Let us have preliminary standards of sufficient kind, and the curriculum will, in process of time, and with growing subjects, and with the wealth of the country aiding, take care of itself.

It is gratifying to know that the medical colleges are, with almost unanimity, moving in the direction of exacting certain educational requirements for matriculation. In the Report of 1891 of the Illinois State Board of Health it is stated that 129 colleges out of 148 in the United States and Canada have adopted some standard of general qualifications. It will soon be the universal rule. Even if the requirements are with many of the most shadowy kind, still they are requirements. They aim at securing mental training as a preliminary, and the whole means progress. The most desirable state of things would certainly be if, as a prerequisite to the study of medicine, a degree in arts and science be demanded.

But the country is not ready for this. It would exclude many who are fully competent to study and to profit by their studies. All we can now ask for is proof of sufficient mental training, and it would be best if this proof were forthcoming from bodies unconnected with medical teaching.

But, if we are to get our students of medicine from the universities and colleges of the country, we must be sure that these give us help. Here I fear I am treading on ground which has been gone over thoroughly; but I wish to record at least my individual opinion that, if you want medicine in its higher branches to flourish, if you want it to flourish through university influence and university support, especially if the universities are to become the general medical educators, the university must meet you more than half-way. You must have not simply a shorter course of preliminary study at these universities—and I am an advocate of the three years' course for the degree in arts and in science—but you must also have them in every way giving facilities to those who are desirous of choosing medicine as a profession.

The assertion that the medical classes show a smaller proportion of college graduates than was formerly the case I know to be true. I have followed the matter for some years; and the reduction, I find, is general. The Dean of the Harvard Medical School states that in 1884 the per cent. of college graduates in the Medical Department at Harvard was 53.9, and that in 1892 it was 28.2. At Columbia it rose from peculiar causes to 34.7 in 1891, and was 32.5 in 1892. At the University of Pennsylvania, the Medical Department of which is solving the same problems as Harvard in the same spirit, the college graduates were, at the session of 1890–91, 152 out of 582, or 26 per cent.; in 1891–92, 167 out of 693, or 24 per cent.; in 1892–93, 168 out of 835, or 20 per cent. In some of the medical departments of universities in which the proportion has not been very high there is much less difference to be noted. For instance, in the well-known University of Michigan, in 1882–83, in a class of 378, 40 were college graduates, or 10.6 per cent.; in 1890–91, in a class of 369, 39, or 10.5 per cent.; in 1892–93, in a class of 370, 35, or 9.4 per cent. There are sixteen medical colleges, as I learn from a recent instructive paper by Dr. Bayard Holmes, in the *Journal of the American Medical Association*, with no student enrolled who had obtained a literary or a scientific degree.

Yet I am quite certain that, while the number who complete their academic studies is less, the general average of those of mental training is much higher, and the number much greater who have been for a year or two at some of the higher educational establishments, but have left without graduating. I made it a point for years, while actively connected with a medical school, to inquire into this matter, and kept records that were convincing. This is, I think, only an additional argument for the universities and colleges to consider. The age at which they graduate young men is certainly too high for the professions, especially that of medicine, which requires a long period of special study. It is, undoubtedly, the chief cause why the graduates of colleges are diminishing in the medical schools. Why should the age be so high? Why, here, in a young, rapidly developing country, where men want to, and mostly have to, get to work early, should we require this long preparation? I have taken some trouble to go over the reports of the universities of France and of Germany, and I am astonished to see the difference. The men who enter the professions, with their academic course completed, are, as a rule, nineteen years of age. In a work *On the German Universities for the Last Fifty Years*, by Professor Conrad, of Halle, he states that during a long term of years there was but 23 per cent., or, to speak accurately, 23.1 per cent. of men who were over twenty. We must attain the same here if we want to have college-bred men enter the professions. The colleges must recognize and take into account that professional work is itself a continuance of mental training and culture.

But this subject is too wide a one to follow further here. Let me return to the aims and results of medical education in this country. Vast good has been accomplished by the methods now gaining. It educates those who are trained by it before they see their patients; formerly they educated themselves largely off their patients. I need scarcely say that I am heartily in sympathy with the advance that is going on—the advance as to time required for the course, the advance as regards the subjects taught. But there are in all great movements periods of ebb and flow, of advance and retrogression. We are in risk of retrogression in trying to put too many subjects into the curriculum. The medical student cannot master them all. You cannot turn him out a finished article. The thing is impossible. Let him keep some of his angles. They will be worn off quickly enough when he gets into practice. Teach some subjects thoroughly and let the rest alone. Treat him less as a school-boy and more as a member of a university; develop in him the university idea. Allow him after the first year to choose for himself much more than he is now permitted to, with full knowledge of the subjects required at the final examination. And there is another matter allied to this on which I feel strongly—the constantly recurring examinations. I am utterly opposed to the everlasting examination of the poor medical student. Why cannot you take it for granted that he is developing? Why must you always pull him up by the roots to satisfy yourself that he is growing? We all know that the knowledge of examinations and real knowledge, knowledge that from training and use has become a part of the man, are not always the same thing; and, after all, you do not want to turn out medical prize oxen stuffed and fattened for examination, but medical men with thought, with power, with intelligence, and with love of work and of original investigation. Let us act on the belief that the medical graduate is a compound to be made by synthesis, not by analysis.

A good deal has been said here, and well said, about the desirability of endowing universities. I am sure I sympathize deeply. I think that if Dante is still at work on his *Inferno*, he ought to add a chapter on the tortures that shall await rich men who do not give large sums to universities and colleges. But, after all, it is not simply by endowments that institutions flourish. It is also by appreciating the great teachers they have, doing them every honor, treasuring them. A great teacher in medicine, as a

great teacher in anything else, is rare. Hold him dear when you have got him. Show him every honor. Advance him. He is a potent influence in life: his memory is a power. Who goes to Paris without thinking of Laennec, Andral, Trousseau, and Nélaton? Who visits Vienna and does not have before him Rokitansky, Skoda, and Oppolzer? Who can go to Berlin and not think of Langenbeck and Frerichs; or to London and be unmindful of Hunter and Cooper and Bright? Who comes to Harvard and does not remember the Jacksons and Bowditch and Bigelow and Clark and Ellis and Storer and Shattuck and many others of fame? Their memories go to make up the School, and continue from generation to generation. In these memories they have left much behind them. Some have left also, from their very households, worthy successors; but all have left that great influence which, like the unseen subtle ether, goes to form the rays of light that illuminate a great university. I have made it a rule in these remarks not to speak of the living; but I must make one exception. In the list of those in whose memories Harvard is rich—I find myself speaking almost as if he had passed to another world and bequeathed his immortal name—there is also Holmes. Who has struck a straighter, a keener blow for medical rights, for honesty in the profession, and against shams, than Holmes? He reminds me of one of those Eastern knights whose blade was so skilful that it severed the head of an adversary or cut him down to the saddle, yet he would keep together until he was touched, when he fell asunder.

But I must not be tempted by the interest of the occasion and the kindly warmth of your reception to say more. As I look around me and see the earnest faces of those who are fighting together life's battle in the same cause; as I see side by side the veteran whose name is honored everywhere and the young man who is still to win his laurels, united in one desire, eager all for helpful aid and to promote useful endeavor—it is not teacher and pupil I think of, but brother joined to brother, intent on upholding the beneficent influence, the traditions, the fame, of Harvard, and joyfully ranged around the glorious old banner that, on its crimson folds, shows victories in all science, literature, learning, progress.

SOCIETY PROCEEDINGS.

FIRST PAN-AMERICAN MEDICAL CONGRESS,

Held at Washington, D. C., September 5, 6, 7, 8, 1893.

(Continued from page 335.)

SECTION ON GENERAL MEDICINE.

FIRST DAY—SEPTEMBER 5TH.

THE PRESIDENT of the Section, PROF. VICTOR C. VAUGHAN, delivered an address on "The Principles of Immunity and Cure in the Infectious Diseases," which will be published in full in a future number of THE MEDICAL NEWS.

The paper of DR. FRANCISCO A. RISQUEZ was entitled "Forms of Malaria and their Characteristic Features." The malarial diseases in Venezuela may be classified as follows: I. Intermittent forms, generally quotidian, occasionally tertian. II. Continued forms, including the varieties: (*a*) bilious, (*b*) icterohematuric. III. Pernicious forms, including the varieties: (*a*) pernicious proper, (*b*) complicated. IV. Larval forms, including the varieties: (*a*) periodic, (*b*) continued.

The forms of the first group are easily recognized by the features of the paroxysm and by the periodic element. When the access is prolonged, the diagnosis may be difficult. The forms of the second group are distinguished by the gastro-hepatic symptoms and the indications of the urine. They may be confounded with others, especially with those of yellow fever, and the distinction becomes often a matter of life and death. The forms of the third group are recognized by the preëxistence of malarial paroxysms. It may become almost impossible, however, to distinguish between cholera, pneumonia, or tetanus, and cases of choleriform, dysenteric, tetanic, or other pernicious fevers. The forms of the fourth group present still greater difficulties, especially in the continued varieties. They may assume all the appearances of typhoid fever, of cholera, of dysentery, of paralysis, of hemorrhage. The malarial cachexia may simulate tuberculosis, hepatic abscess, etc.

An early diagnosis is indispensable in these cases, because they require the fearless administration of quinine; and this drug may be contra-indicated in the non-paludal diseases. There is but one unquestionable method of diagnosis: *the microscopic examination of the blood.* All malarial manifestations are accompanied with melanemia; melanemia presents itself exclusively in malaria, and the sign is, therefore, pathognomonic. A drop of malarial blood, under the microscope, shows the masses of black pigment in the plasma. The manipulation requires no special technique; it is simpler than the examination of the urine. It does not require, as the parasite of Laveran does, an investigation by an expert with high powers of the microscope. Our method requires only a few slides and covers, and a drop of blood obtained from the finger, previously washed. The preparation is taken to the laboratory and there examined. The strong mineral acids may be used as reagents.

A search for pigment should be made in all suspected cases. The number and size of the pigment masses is proportional to the degree of malarial poisoning. If they are found at all, quinin should be given. The author has found pigment in all forms of malaria. He has found it also in other diseases, but only as evidence of malarial complication. Melanemia is always an indication for the administration of quinin. The life of the patient depends often in these cases upon a prompt diagnosis.

DR. MENDEZEBAL, of Mexico, read a paper on "Paludal Fever in Orizaba."

SECOND DAY—SEPTEMBER 6TH.

DR. WILLIAM C. DABNEY, of the University of Virginia, read a paper on "Typhoid Fever," based on a study of fourteen cases of continued fever occurring at the University of Virginia between January 15th and April 1, 1893. The epidemic, or outbreak, presented the following features of interest: 1. There had been no typhoid fever in or around the University, so far as the author could learn, for several months. 2. Between the middle of January and the first of April, 1893, there occurred

fourteen cases of continued fever among persons living or employed on the University grounds. 3. The persons who had this continued fever had rooms at widely separated parts of the University grounds, but all took their meals at the same hotel. 4. The water-supply of this hotel was the same as that of the other hotels and of other parts of the University, and the sanitary condition of the building was good. 5. A part of the milk-supply was obtained from cows whose teats had been washed in water contaminated by sewage, and *probably* infected with typhoid-fever germs. It was in evidence also that at least five of the fourteen persons used milk at every meal. 6. Of the fourteen cases of continued fever five presented the typical features of typhoid, seven were typical in character, and of the other two the author could not speak with certainty, as they were not under his care, and he could get no satisfactory history of the cases.

DR. CLAIBORNE, of Petersburg, Va., in discussing the paper, said the differential diagnosis between typhoid fever and malarial fever is often quite difficult. It is not the habit of physicians in his part of the United States to make many post-mortems, and without post-mortem examinations he cannot see how these cases are to be classified. It is very difficult, indeed, for him to classify the cases which have a fever, commencing as a chill and running at once to a very high temperature, *without* other symptoms. Some time ago it was customary to call these cases of typho-malaria the result of two poisons —of vegetable and animal forms. However, the physician who made this classification has since practically recanted it. The writer had frequently seen cases of fever beginning, apparently, as a malaria and ending in typhoid. He is in the habit of testing these cases with gr. xx of quinin three times a day. If this does not produce exacerbation, he is pretty certain that it is something else than malarial fever. With the exception of that test, he is at sea, and he would be very much obliged to any member of the profession who will give any information on the subject.

DR. LARRABEE, of Kentucky: Dr. Dabney has mentioned a very common mode of the production of the disease; but the water, in his cases, was put on the outside instead of on the inside of the cow. In this respect it was different from the ones with which I have come in contact. In the city of Louisville forty cases were traced to a single milk-supply; there the water was used for washing the utensils. Thirty-seven cases were traced to this, leaving only three doubtful cases. In the malarial districts, in the West and Southwest, it is indeed difficult to differentiate typhoid fever without the use of quinin. If it be malaria, and quinin be given, it is well to have recourse to an old remedy; for, although we have moved into a new house, some of the old furniture fits very well. I refer to calomel. (Applause.)

DR. FORD, of Philadelphia: It would be interesting to know whether typhoid and malaria are ever mixed. It seems to me there must be some cases of mixed infection.

DR. LEIGHTON, of Brooklyn: During the war, in Maryland, there were many cases of intermittent and remittent fever which were difficult to differentiate. There was an opportunity to make quite a number of post-mortem examinations, for many cases terminated fatally, and there were found the diseased glands and congested liver.

DR. SIBBETT, of Carlisle, Pa: I was sent as medical inspector to a school where forty-two pupils were taken down with typhoid fever. Two of them died in a few days. The most malignant form, apparently, set in first. At that time we had an endemic of almost every form of typhoid or continued fever. It was my duty to find the cause and report. There were two difficulties: bad water and bad privies. In these forty-two cases I tried to determine when the fever began and when it ended. I came away from this investigation with the impression that it is impossible for us to tell.

DR. WEST, of Texas: A great mistake has been made by not recognizing the fact that the typhoid condition never exists without the typhoid fever. Not only do you have the occurrence of these abortive cases of typhoid fever, but often the patients remain on their feet almost until death. We have many cases of so-called mild typhoid fever, and the cases related are examples of this. When you know quinin is absorbed in the blood, it will have its effect on malaria. In the hospital where I serve we have malaria and typhoid-fever patients side by side, often from the same ship and various parts of the United States. We often have both infections occurring at the same time on board a vessel, but I have been unable to say positively that a certain case is typho-malaria.

DR. PURSELL, of Illinois, urged caution in the treatment of these cases owing to the danger of perforation.

DR. VICTOR C. VAUGHAN, of Michigan: There may be such a thing as typho-malarial fever, but no man has ever, as yet, demonstrated its existence. To-day there are three theories concerning the causation of typhoid fever: The German theory, that typhoid is caused by a certain germ; that it is a specific disease, the same as smallpox. One of the definite characteristics of the germ is, that it will grow upon potato, forming an invisible growth. The Koch-Eberth germ is the only germ capable of causing typhoid fever. The other theory we may designate as the French theory, which is that the cause is a modified form of the bacillus coli communis, which sometimes acquires extraordinary virulence. If the French theory is correct, the pollution of water with any fecal matter may cause typhoid fever. If the German theory is correct, it would be perfectly safe to drink all the fecal matter you wish, provided it comes from healthy persons. Now, there is another theory, and that is, that typhoid fever may be caused by any one of a number of germs, which are closely related to one another, but which are not connected either morphologically or physiologically, and consequently we cannot expect the symptoms to be the same in all cases. For the last twelve or fifteen years I have, on account of certain official positions, investigated every outbreak of typhoid in the State of Michigan, and for the last six or seven years I have accompanied these with a bacteriological examination, both of the drinking-water supply and, for the last two or three years, of the spleens of the persons dead from typhoid fever. While I have seen thousands of cases of typhoid fever, I have yet to see a case of *typical* typhoid fever, as described in the text-books, where the temperature is graded day after day. Of course, in many of these cases the tempera-

ture is interrupted by the treatment. Further, I have never, as yet, found in the drinking-water, or in the spleen of a person dead from typhoid fever, a germ identical with the supposed specific germ. Occasionally I have found germs which form an invisible growth on potato, but they have been different from the Eberth germ. In a recent outbreak at Ironbrook I inoculated beef-tea, and after twenty-four hours injected it into animals. The germ was then found in the spleen, kidney, and liver. I directed sent to me the spleens of all persons dead from typhoid fever, and in these, which were quite a number, I found the same germs as in the water. I think this pretty positive proof that the germ caused the disease. I think we have a group of causes, just as in the vegetable world we have a number of plants which produce poison, varying in virulence according to the conditions in which the plant grows. Tobacco grown upon different kinds of soil will show changes. Why not germs, which pass through a number of generations in a short time? A woman living in the country does not go from home, but dies of typhoid fever. A post-mortem is held, and it is found to be true typhoid fever. Some contend that such cases are caused by infection carried by a tramp with walking typhoid fever, who, visiting the various water places, infects the neighborhood. There are 50,000 deaths in this country of typhoid fever and 500,000 sick with it. This shows that the germs must be widely distributed. I am sure that healthy individuals aid in distributing the disease.

DR. DAVID LOBO, of Venezuela, read a paper entitled "A Contribution to the Clinical Study of Prolonged Remittent Fever." It was his purpose to describe a certain form of malarial infection which, he believed, has received very little attention from standard writers on tropical diseases. The description was based on clinics exclusively, referring to the various individual conditions, and was intended to impart his personal views in regard to the malady as it occurs in Caracas.

Etiology. The aspect and extraordinary course of the pyrexia are probably due to corresponding variations in the power and quality of Laveran's corpuscles, to overpoisoning of the blood, or to some distinct element operating simultaneously with the paludal germ.

Variations in temperature do not respond to any fixed law of recurrence. The temperature generally ranges from 38.5° to 40.5° C., and drops or rises unexpectedly. Remissions take place at any moment of the day. Intermissions may recur, but they should never be trusted. *Chills* and *sweating* may be observed, but never as definite stages of the fever.

Special symptoms. *Circulation* and *respiration* do not exhibit any deviations, except those induced by the reaction of the organism under the influence of abnormal heat. Divergencies between pulse or respiration, and temperature, should be looked to and carefully treated.

The fever frequently runs its entire course free from complications. There are serious incidents generally; their gravity depends on the importance of the organ attacked.

It is obvious that the whole clinical history of the disease may be condensed into two prominent facts, viz., an irregular temperature and a long, weary course.

Diagnosis. The main points by which long remittent fever can be discriminated from other *malarial forms*, are its uncommon course, its irregular temperature, the absence of marked stages, of hepatic or splenic troubles, and its resistance to quinin.

Between it and *typhoid* there is no possible confusion; typhoid is cyclic in its career, is accompanied by intestinal lesions, presents peculiar eruptions, and is extremely rare at Caracas.

The so-called *typho-malarial* fever exhibits typhoid symptoms, which are never present in ordinary remittent.

Vomiting of black matter and albuminuria are perfectly distinctive of *yellow fever.* The course of this never exceeds ten days.

Pernicious fevers are sufficiently distinguished by their short duration and characteristic aspect.

When complicating or intercurring processes do not occur, a fatal issue is seldom to be feared. High temperature, extreme weakness, frequent vomiting, copious sweating, and diarrhea, generally impart a serious character to the disease.

Prognosis is entirely different when we have to deal with organic complications.

Complications. The fever may give rise to a special inflammation of the lung, to which the term *pseudo-pneumonia* can be properly assigned.

Among nervous complications, none is so terrible as *cerebral congestion.* It may assume a *convulsive* or a *comatose* form, but the latter is more common. The convulsive form is probably due to meningeal congestion. The issue is fatal in nine cases out of ten.

Acute entero-colitis, *dysentery*, and *choleriform diarrhea* are fearful complications, as they often lead to a fatal result. *Hemorrhage* and *acute peritonitis* are apt to occur as secondary phenomena, subsequently to ulceration of the digestive duct. The *kidneys* generally undergo no injury at all. Urine is *never albuminous.*

Treatment. Long remittent fever is very slowly influenced by quinin. There are cases in which the drug is absolutely useless, whether it be given in large or small doses. If administered to excess, it is apt to cause irritation of the stomach, vomiting, diarrhea, heart depression, and collapse. The view that quinin will prevent complications is merely hypothetic.

Aconite, *arsenic*, and *carbolic acid* may be resorted to in protracted cases. I place very little confidence in their action.

Warburg's fever tincture is a valuable remedy. *Salicylate of sodium*, *antipyrin*, *antifebrin*, and similar agents will surely act on temperature, but their effect should be carefully watched.

Tonics should be freely ordered.

Chlorate, *iodid* and *potassium bromid* are indicated in very chronic cases.

Cool baths or *lotions* are an innocent and efficient means of lowering the temperature. They must not be spared.

A *proper diet* should be prescribed from the first, including good wine and diluted brandy. Complications call for a special treatment, entirely dependent upon the nature of each case.

In the discussion of Dr. Lobo's paper, DR. OSLER, of Baltimore, said: Without a very careful study of the blood in such a disease as Dr. Lobo describes, it would be very difficult to distinguish it from typhoid fever. In this latitude we do not have the protracted cases of remittent fever in the form he described, which will not

yield to quinin. A fever in this latitude which does not yield to quinin, properly given, within three or four days, is not malaria. Dr. Risquez lays great stress on the black pigment in malaria. In many of the cases of very acute malaria in this latitude, there is very little pigment indeed. *In some of the most malignant forms* there is very little pigmentation to be seen in the red blood-corpuscles, in the early stages of the disease. I would emphasize the importance of careful study of the blood in all cases of continued fever.

Dr. Lobo: I think that the clinical appearance of the disease is usually characteristic. Its course is so extremely different from typhoid fever and ordinary remittent fever that the symptoms described, in my opinion, are sufficient to designate it. In reference to influenza, I think there is no confusion possible between the two diseases. As to typhoid, you must bear in mind that typhoid is extremely rare in Caracas, and almost absent from the city. I have seen only two cases of regular typhoid fever in Caracas. Can you say that a person affected with a fever, having no congestion of lungs, of liver, of bowel, of spleen, no delirium, no convulsions, etc., is affected with typhoid fever? In pernicious malarial fever the symptoms develop rapidly, the patient dying in twenty-four to thirty-six hours, and there is scarcely any time for the employment of quinin. In intermittent fever you have never such startling symptoms. Your patient may sit up with it one, two, or three months, and you may be almost sure your case will recover. Quinin does no good in such cases.

Solomon Solis-Cohen, M.D., of Philadelphia, then read a paper on "Vasomotor Ataxia."

1. By the term "vasomotor ataxia" it is proposed to designate the condition of instability of the mechanism of circulation present in certain persons, and characterized by abnormal readiness of disturbance with tardiness of restoration, of the equilibrium of the cardio-vascular apparatus. The manifestations are most strikingly displayed in the terminal vessels and occur chiefly under the action of external influences, especially cold; of toxic agents; and of emotion. The stimulus may be applied centrally or peripherally, but in each case the resulting phenomena indicate a defect of central inhibition.

2. Vasomotor ataxia is in many cases congenital; in some inherited; the condition is not rarely present in several members of a family.

3. In some cases the phenomena are of paretic, in others of spasmodic character. Usually the two kinds of phenomena are displayed in varying degree in the same patient. Whether spasmodic or paretic, the symptoms are suggestive of incoördination.

4. In exophthalmic goiter, especially such cases as are produced by emotion or are markedly intermittent, is found the extreme type of the paretic variety of vasomotor ataxia.

5. The form of Raynaud's disease known as "local syncope" furnishes an extreme type of the spasmodic variety, while "local asphyxia" exhibits both spasmodic and paretic phenomena.

6. Between these extremes are numberless gradations down to the slightest departure from normality, while even the extreme symptom-groups represent merely exaggerations of phenomena that under certain conditions occur in normal individuals.

7. Dermographism is an essential feature of vasomotor ataxia, and in most cases factitious urticaria can be readily produced by cold or by pressure, or by both; mottlings of the skin, certain peculiar markings of the nails, telangiectases, and stigmata, are common.

8. There is usually a hemorrhagic tendency, as shown by ecchymoses, petechiæ, epistaxis, hemoptysis, hematemesis, hematuria, and retinal hemorrhage.

9. Even in the absence of hematuria, red blood-cells are often found in the urine; uric acid, urates, and oxalates are likewise common; the presence of albumin, tube-casts, and cylindroids, is less common, and is usually intermittent. Glycosuria has been observed.

10. In many striking cases there has appeared to be morbid alteration of the thyroid gland.

11. The action of the heart is usually rapid, irregular, and easily disturbed; palpitation is common, and in some cases intermittent tachycardia has been noticed. Hemic and functional murmurs are not uncommon.

12. Among other symptoms and morbid associations observed are drug-idiosyncrasies, urticaria, local edema, angina pectoris and pseudo-angina, hyperidrosis, asthma, hay-fever, vertigo, migraine and other forms of headache, transient hemiopia and other visual disturbance, persistent mydriasis, astigmatism, myopia, hyperopia, menstrual irregularities, intermittent polyuria, rheumatism, chorea, epilepsy, neurasthenia, gastralgia, enteralgia, and membranous enteritis—most of which are doubtless related as effects of a common cause or as secondary results.

13. The development of pulmonary tuberculosis in some cases is probably a sequence of vascular and trophic disturbance in the lung.

Dr. West, of Galveston, Texas (in discussion): I recall a number of cases, and I find these have generally occurred in females, and those I recall now occurred in sterile women and were associated with menstrual disorders. It seems to me the name of vasomotor ataxia is a very good term. It gives a local habitation and a name to a disease we frequently meet with, and whose cause is exceedingly obscure.

Dr. Cohen: The pathology of the disease is obscure, of course. The pathology of the whole sympathetic system is obscure. I believe the disease is a congenital one. It is largely a defect of development, and if searched for would be found in many more instances than have been recognized. By recognizing the liability of our patients to such conditions, and by taking proper treatment, we can, I believe, in very many cases save our patients from many of these graver conditions.

Dr. J. M. Anders, of Philadelphia, read a paper on "The Complicating Conditions, Associated Diseases, and Mortality-rate in Erysipelas." During the year just past the writer had been engaged in conducting a collective investigation into the disease of erysipelas. The average duration of the affection was computed in 1880 cases, and found to be (including relapses) 25.13 days. Erysipelas in a typical form is a self-limited disease; that the length of the attack is greatly influenced by the age of the person *per se*, its average duration in persons over fifty years being considerably longer than in younger subjects; sex has no influence in this direction. Certain conditions and diseases increase the liability to the complaint.

I propose to present the results obtained from a study of a series of 1674 cases, which were analyzed with particular reference to complications. In the opinion of all authors the death-rate is exceedingly variable, ranging, according to some writers, from 1 to 50 per cent. The comparative gravity of the leading complicating conditions and diseases is shown by the following table:

Complications.	No. of instances.	Deaths.	Recoveries.	Per ct. of deaths.
Abscesses	105	8	97	7.6
Acute rheumatism	20	2	18	10
Pneumonia	7	4	3	57.1
" catarrhal	2	...	2	0
Delirium	7	4	3	57.1
" tremens	10	8	2	80
Pleuritis	7	1	6	14.3
Acute nephritis	6	3	3	50
Phlebitis	7	0	7	0
Synovitis	5	0	5	0
Diarrhea	5	0	5	0
Edema of larynx	2	2	...	100
Pyemia	1	1	...	100

It will be seen that, while abscesses are common, they do not to any extent augment the mortality-rate. Pneumonia, delirium, delirium tremens, and acute nephritis are among the graver complications. Acute rheumatism, on the other hand, stands second in frequency, but is comparatively harmless. To account for the increase in the percentage of fatal cases due to acute articular rheumatism we possess no positive knowledge. The opinion is, and long has been, prevalent that erysipelas benefits and even cures articular rheumatism and other affections (including carcinoma and sarcoma).

These deductions may serve not only to reiterate some of the leading demonstrated facts, but also to facilitate a discussion of the same:

a. In typical cases erysipelas is a self-limited disease, the average duration in persons under forty years of age being fourteen days.

b. The course of the disease was greatly lengthened when complications were present or chronic affections preëxisted, as well as when occurring in persons over fifty years of age.

c. Certain chronic affections, notably pulmonary tuberculosis, chronic nephritis, chronic rheumatism, and organic diseases of the heart increase the susceptibility to the complaint, having been present in 7.8 per cent. of the total number of cases.

d. The most common complications were abscesses and acute rheumatism; the rarest meningitis, ulcerative endocarditis, and pericarditis, the latter not having furnished a single instance.

e. The general average mortality was 6.57 per cent., while in the cases from private practice it was 4.16 per cent; in persons under forty years it was only 3.5 per cent.; in those over seventy years, 46 per cent., and in the traumatic cases 14.5 per cent.

f. The mortality list was augmented as much as 25 per cent. by the presence of coexisting chronic affections.

g. The numerous complications also increased the percentage of deaths, and certain of them in an especial degree, notably lobar pneumonia, acute nephritis, delirium tremens, and active delirium.

h. Age has a decisive influence upon the mortality after the fiftieth year, this effect becoming more pronounced after the sixtieth year.

DR. VAUGHAN alluded to a case in which a child suffering with a sarcomatous growth was inoculated with erysipelas. The child's death was apparently hastened by the erysipelas.

DR. CRONYAN, of Buffalo: Some time ago we had a patient in the Buffalo Hospital with progressive locomotor ataxia. He was attacked with erysipelas of the face, extending over the whole of it and over the head, involving the meninges of the brain. We administered the tincture of iron, after which we purged him with calomel. After recovery from the erysipelas, the patient required no "sticks," but was able to walk about as well as anybody, and continued to do so the rest of his life—a number of years. I agree with the author, the age of the patient has much to do with the fatality of the disease.

DR. DESAUSSURE: The author mentions the frequency of heart-disease in these cases, and I would like to ask if he attributes erysipelas to that disease. Also, were the abscesses in his cases located in the deep cellular tissue or in the neighboring lymphatic glands?

DR. ANDERS closed the discussion: The fact that so few die of this disease who are attacked with acute articular rheumatism, is very good evidence of its action. In fact, erysipelas is supposed by some to cure acute articular rheumatism. Endocarditis is apt to occur in cases of articular rheumatism; perhaps the percentage of cases in which they do occur is not less than thirty. As to whether organic heart-disease causes erysipelas, I would say, By no means. Chronic affection of the heart merely predisposes to the disease.

(To be continued.)

NEWS ITEMS.

Colorado Medical Library Association, of Denver, Col.—The medical fraternity of Denver and Colorado are endeavoring to build up a medical library in Denver. Owing to remoteness from the centers of population the work undertaken is difficult in many ways. Societies can aid materially in this enterprise by sending their *Proceedings*. Anything in the way of medical literature sent will be acknowledged, placed on the shelves of the library, and brought to the attention of readers. Address, care Public Library, Denver, Col.

Cholera has appeared in Hamburg again, twelve cases and nine deaths having occurred from September 13th to September 18th. In Italy and France the disease is still spreading. In Palermo there were fifteen fresh cases and nine deaths on the 18th. The disease is also on the increase in Russia, Galicia, in Bukowina in Austria, and there is much alarm in Germany. Braila in Roumania is infected. During August nineteen deaths occurred in Antwerp.

Yellow Fever.—At Brunswick, Ga., yellow fever has broken out, according to telegrams from Dr. Guitéras to Surgeon-General Wyman. The latter is acting with most commendable intelligence and energy to stamp out the disease and to prevent its spread, by quarantine, disinfection, and restriction of travel, mail-communication, and a thorough organization of all means of control.

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ORIGINAL ARTICLES.

SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF INTRA-CEREBRAL HEMORRHAGE AND IN THE TREATMENT OF CHOREA.[1]

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INTRA-CEREBRAL HEMORRHAGE.—Usually the first and most obtrusive symptom of intra-cerebral hemorrhage is apoplexy, or partial or complete loss of consciousness, more or less sudden in onset, and more or less prolonged in duration. In the majority of cases we have added the local or hemiplegic symptoms. In the severer forms of cerebral hemorrhage there is complete relaxation of all the voluntary muscles of the body, including the sphincters of the anus and bladder. In the milder cases there may be only slight obscuration of consciousness; in the severer ones, unconsciousness is profound.

In a typical case of cerebral hemorrhage, ushered in by marked apoplectic symptoms, the patient lies as in a profound sleep, with a tendency to stertorous and labored breathing. The skin is usually bathed in perspiration. The pulse is often full and bounding; sometimes it is small, rapid, and incompressible. The temperature, at first, in all but the milder cases, is lowered from 0.5° to 1° or 2°, but in a few hours it rises from 0.5° to 1° or more above normal. Immediately after the shock the temperature on the paralyzed side is lower than on the unaffected side, but in a very few hours it is higher on the affected than on the non-affected side. A careful study of the temperature is of considerable importance, both in the diagnosis and prognosis. The face is often flushed, but sometimes it is pale. The urine is at first abundant and of rather low specific gravity, but soon it becomes less abundant and has a high specific gravity. Sometimes it contains albumin, but no tube-casts, unless there is some renal complication. Convulsions are more common in lesions of the cortex; vomiting is most frequently met with in lesions of the cerebellum.

In nearly all cases, except the severer ones, in which there may be complete relaxation of all the voluntary muscles of the body, there are local, or one-sided, symptoms. The most pronounced of these is the hemiplegia, involving the leg, arm, and face on the same side. In rare instances there is crossed paralysis, with affection of the leg and arm on one side, and of the face on the opposite side. When the hemiplegia is incomplete, the arm is most affected, the leg next, and the face least of all. The distal portions of the extremities are more affected than the proximal. Immediately after the shock the deep reflexes are abolished on both sides. They return first on the unaffected side, but they soon return on the paralyzed side and become more pronounced than in the unaffected limbs. The superficial reflexes not infrequently remain absent on the paralyzed side for several weeks. One pupil may be dilated and fail to respond to light, or both may be dilated or contracted. The eyeballs are usually fixed, and more commonly they deviate to the paralyzed side, although there may be conjugate deviation of the eyes with turning of head toward the unaffected side. The facial paralysis is limited to the lower part of the face, and the affected cheek puffs out during expiration. If the patient is able to protrude the tongue, it deviates toward the paralyzed side. Even when the unconsciousness is profound, the muscles on the affected side are not so completely toneless as those on the unaffected side. The local symptoms vary according to the seat of the hemorrhage.

In a given case of supposed cerebral hemorrhage, during the apoplectic state, the diagnosis has to be made from a similar condition caused by syncope, or by chloral, opium, or alcohol poisoning, or by uremia, epilepsy, hysteria, embolism, thrombosis, the apoplectiform attacks occurring from cerebral congestion or from the cerebral state found in paretic dementia, and from "simple apoplexy" in the aged.

Syncope from cardiac failure is easily distinguished from cerebral hemorrhage. In the former the heart's action is exceedingly weak; the pulse is small, very feeble, and almost imperceptible; the face is blanched; the lips are very pale; respiration is shallow, or it may be sighing and irregular; reflex action is rarely abolished; the sphincters are not relaxed; the pupils are equal and widely dilated, and there are no hemiplegic symptoms.

Chloral-poisoning. In profound unconsciousness from chloral the subject is in a peaceful and undis-

[1] Read at the meeting of the Colorado State Medical Society, held at Denver, June 20, 21, 22, 1893.

turbed slumber; not a voluntary muscle moves, and all is calm. Breathing is rather slow and shallow, the pulse is soft, weak, and infrequent, and the temperature is usually slightly subnormal. There is complete absence of all local symptoms.

Opium-poisoning. The onset of the symptoms, if this is known, the equal and contracted pupils, the slow respiration, the normal temperature, and the absence of all hemiplegic symptoms, would point to opium-poisoning. If the symptoms began suddenly with a general or a partial convulsion, chloral, opium, and alcohol poisoning could be excluded.

Alcoholic unconsciousness. An alcoholic odor of the breath, a coma from which the patient may be temporarily aroused by loudly calling his name, equal pupils, nearly normal temperature, and the absence of unequal temperature on the two sides of the body, point to alcoholic poisoning. Violent struggling, when it occurs, strongly indicates alcoholism. There are no localizing brain-symptoms.

Uremic coma. Albumin and tube-casts in the urine suggest uremia, but albumin is frequently found in considerable quantity in the urine in cases of cerebral hemorrhage, especially if attended with convulsions, but tube-casts are usually, if not always absent, except when kidney-disease has preceded the hemorrhage. It must be borne in mind that renal disease, especially the senile form (granular disease of the kidney), occurs in about one-third of the cases of cerebral hemorrhage. The peculiar physiognomy of renal disease, with local dropsy, equal pupils, less profound coma, and usually nearly normal temperature (according to Gowers it is always subnormal, except in cases in which local inflammation exists), the presence of the odor of urine in the breath, and the absence of hemiplegic symptoms occurring in a young subject, are usually sufficient to diagnosticate uremic coma. Gowers states: "Rigidity of limbs or local muscular twitching during the coma is, if constant in seat, in favor of cerebral mischief; if variable in position it is in favor of uremia."

Coma of epilepsy. If the history of the patient is known and the onset of the attack has been witnessed, no difficulty will occur in the differential diagnosis. If the patient is first seen in post-epileptic coma, without any knowledge of his previous history, the absence of hemiplegic symptoms and the short duration of the coma would serve to distinguish the case from one of cerebral hemorrhage, except in the status epilepticus (a state rarely, if ever, reached without the history of the patient being known), when in the absence of a history of the case it would be almost impossible to exclude cerebral hemorrhage in which no hemiplegic symptoms are present. Fortunately for the diagnostician, in nearly all cases of cerebral hemorrhage attended by convulsions following each other in rapid succession, unilateral symptoms exist, but multiple thrombi and emboli may give rise to a condition resembling the status epilepticus without a single unilateral symptom.

Hysterical coma. I have yet to meet with my first case of hysterical coma in which difficulty has been found in excluding cerebral hemorrhage. In the cases that I have seen, the absence of all positive symptoms of organic disease and the presence of hysterical stigmata have rendered the diagnosis easy. The face is rarely, if ever, paralyzed in hysteria. The danger of mistaking cerebral hemorrhage for hysteria is much greater, and in some cases can only be avoided by a careful search for symptoms of organic origin.

Apoplectiform attacks of cerebral congestion. In this condition the symptoms are general, with less profound unconsciousness than is found in cerebral hemorrhage. There are no local or hemiplegic symptoms. There is usually a history of previous similar attacks which have passed off without leaving any weakness of muscles. Gowers is inclined to the opinion that in first attacks of this character a positive diagnosis cannot be made.

Apoplectiform attacks in paralysis of the insane. The previous history of the patient is usually sufficient to put the physician on his guard. The seizure is ushered in suddenly with convulsions, local in seat, clonic and tonic in character; the head is drawn to one side; the muscles of the eyes and face may keep up a constant twitching for hours; unconsciousness is profound; the face is dark; respiration is shallow and rapid; the pulse is quick and weak; the temperature is elevated; a profuse perspiration covers the body, and the whole aspect of the patient points to speedy dissolution.

The seizure lasts for a few hours or a day, and is followed by a sleep from which the patient slowly wakes and gradually recovers consciousness. A day or two later, however, the patient is apparently as well as he was before the attack, except that mental deterioration becomes more rapid, with a tendency to the formation of bed-sores and the development of other trophic disturbance. If one were called to see a patient in a first attack of this character without a history to guide him, a diagnosis from cerebral hemorrhage would be impossible. The same character of attacks occurs as a manifestation of cerebral pachymeningitis, and it is probable that these seizures in paralysis of the insane are due to hematoma of the dura, and the immediate cause is hemorrhage.

Simple apoplexy. In persons advanced in life a condition sometimes occurs with a train of symptoms that perfectly resembles that of cerebral hemor-

rhage, but at the autopsy no trace of hemorrhage or other gross cerebral lesion can be found. Such attacks are truly "mysterious" in their nature, and it frequently happens that they cannot be distinguished from cerebral hemorrhage.

Embolism. The younger the patient, with the presence of endocardial disease or syphilis, the greater the chances are in favor of embolism against hemorrhage, except in cases in which the apoplectic symptoms have been very severe, coma profound and long in duration. The parturient state favors embolism. The less the primary disturbance of temperature, provided the paralysis is extensive, the less the chances are in favor of hemorrhage.

Thrombosis. The differentiation of thrombotic softening from cerebral hemorrhage is probably one of the most difficult diagnoses that the physician is called upon to make. Gowers states that "Some writers contend that we can be sure of our diagnosis in only one-third of the cases." He does not agree with this broad statement, and believes that by a careful analysis and comparison of the symptoms an accurate diagnosis can much more frequently be reached than might be inferred from the writings of some physicians.

An accurate diagnosis is of considerable importance, because the treatment of the two conditions is entirely different. I will give the most important diagnostic points of each:

THROMBOTIC SOFTENING.	CEREBRAL HEMORRHAGE.
1. Prodromata frequent.	1. Prodomata infrequent.
2. Great degeneration of the arteries of the limbs.	2. Turgid face and strongly beating arteries of the neck.
3. Pulse soft and often very compressible.	3. High arterial tension, regardless of the size of the pulse.
4. Heart feeble, dilated, and irregular.	4. Heart hypertrophied and beating strongly.
5. Coma less marked in depth and duration.	5. Coma more intense and longer in duration.
6. Following grief and other depressing influences.	6. More likely to be induced by mental excitement.
7. Local convulsions more frequent.	7. General convulsions more frequent.
8. Slight initial temperature-disturbance.	8. Often great initial temperature-disturbance.
9. Slight variation of the temperature within a few hours.	9. Often a considerable rise of temperature from twelve to twenty-four hours after the attack.
10. Secondary inflammatory symptoms frequent and well-marked.	10. Secondary inflammatory symptoms less in frequency and in degree.

The foregoing is only an attempt to arrange the chief diagnostic points of thrombotic softening and cerebral hemorrhage side by side, but it must be evident to everyone that any one of the symptoms may be so modified by conditions and circumstances as to render it entirely valueless, *e. g.*, sudden fall of temperature, succeeded a few hours later by a rise of several degrees, indicates cerebral hemorrhage, but in occlusion of the basilar artery the temperature may rise four, six, or even eight or more degrees, a few hours subsequently to the occurrence of the apoplectic symptoms.

TREATMENT OF CEREBRAL HEMORRHAGE.

I must reiterate what I have said on former occasions in connection with the treatment of a patient while in the apoplectic state from cerebral hemorrhage, that most of such patients would do better without medicine than they do when medicine is simply administered with the hope of doing some good, but the administration of which is not governed by any logical or rational principle.

If we bear in mind that in hemorrhage into the cerebral substance, not traumatic in character, the immediate cause of the hemorrhage is the bursting of a miliary aneurism, we shall appreciate how futile must be our efforts to arrest such a hemorrhage by the administration of medicine. Immediately after the occurrence of the event the indications are to allow the effused blood to coagulate, to promote the flow of the venous blood from the head, to quiet the heart's action, to allay the restlessness of the patient, when such exists, and to prevent an undue amount of blood being carried to the head. We can render the best service in aiding the coagulation of the effused blood by keeping the patient absolutely quiet. The flow of the venous blood from the head is promoted by slightly elevating the head and shoulders, and not allowing the head to be bent forward and thus compressing the veins of the neck. The heart's action is best quieted by the careful administration of small and frequently repeated doses of aconite, when there are no contra-indications to the use of this drug. Restlessness, when considerable, is most effectually relieved by a hypodermatic administration of one-fourth of a grain of morphin; when it is slight, sodium bromid is effectual. Various means are at our command to lessen the flow of blood to the head; sometimes one or two, sometimes all should be employed. Brisk purgation should almost always be resorted to. If the stomach is not irritable, one drop of croton oil in ten drops of sweet oil should be placed on the tongue every hour until the bowels are opened freely. When the stomach is irritable ten grains of calomel should replace the croton oil. Whether calomel or croton oil is employed, an enema, consisting of one ounce of salts, a half-ounce glycerin, and four ounces of water, should be thrown up the large bowel as soon as possible after the occurrence of the hemorrhage. Mustard plasters applied to the back of the neck, the front of the chest, and on the calves of the legs, aid in lessening the quantity of blood carried to the head. Blood-letting is sometimes indicated, but cases necessitating the with-

drawal of blood by opening a vein are probably rare. In regard to the administration of ergot in the cases of cerebral hemorrhage under discussion, I do not believe that it does a particle of good, and there is a possibility of its doing harm. The practice of applying cold to the head, especially ice, in cases of non-traumatic, intra-cerebral hemorrhage, is, I believe, reprehensible. It seems rational to suppose that it may increase the engorgement of the intra-cerebral vessels. When the face is turgid, the head warm, and the carotids throbbing, ice-cloths or iced poultices may reduce the heat of the head and promote the coagulation of the effused blood.

It will be seen that the only routine treatment recommended for intra-cerebral hemorrhage is brisk purgation immediately after the occurrence of the accident, to which may be added the application of mustard plasters to various portions of the body. In the subsequent treatment, during the acute stage indications must be met as they arise. In the chronic stage electricity and strychnin must be used with judgment and great caution. The routine employment of these two agents to overcome the paralysis does much harm in causing irremovable contractures of the arm and leg of the affected side. In this stage strychnin should not be employed when contractures are present, or when the deep reflexes are greatly exaggerated. We must remember that no hard and fast rules can be laid down in regard to the use of strychnin. I have seen cases in the acute stage in which this drug, in combination with aromatic spirit of ammonia, has done good service. When electricity is applied, and, as a rule, it should not be before the end of the fourth or sixth week, the extensor muscles only should be stimulated, and during the application the extremities should be held in their normal positions. Massage, systematic exercise, Swedish movements, and time, do most to overcome the residual paralysis of intra-cerebral hemorrhage.

CHOREA.—I wish to limit my remarks to the so-called acute chorea of Sydenham, as distinguished from the chronic chorea of which much has been written of late, especially of the hereditary form, known as Huntingdon's chorea. It is useless, in an article of this kind, to take up time with the diagnosis of chorea, as but little difficulty is encountered in differentiating it from other forms of nervous troubles.

In two papers written a few years ago, in which I considered at some length the influence of the climate of Colorado in relation to mental and nervous diseases, I expressed the opinion that chorea is no more frequent, is no longer in duration, and is just as amenable to treatment in Colorado, especially at altitudes varying from five to six thousand feet above sea-level, as I had found it in Philadelphia. In a third paper, entitled "The Influences of Climate, especially the Climate of Colorado, on Chorea," I was forced to the same conclusion. After a more extended experience with the disease in Colorado, I still find no reason to change the opinion expressed in the papers just referred to. I see so many cases of chorea that have been under treatment from several weeks to three or six months, which on being placed on a certain course of treatment, yield in two, or, at most, in three weeks, that I believe it may be pardonable in me to give in detail the plan of treatment that I almost invarably follow in the management of chorea.

For a number of years I have refused to assume charge of a case of this disease if the parents and friends will not consent to follow my instructions. In the very mildest cases, in which there is only an occasional grimace of the face, or an infrequent twitch of the muscles of the hand or foot, I allow the patient to sit up part of the day, and spend the remainder of the waking hours on a lounge. No violent or exciting exercise, such as romping, running, etc., is allowed. The patient is placed on a nutritious, digestible, but non-stimulating diet. The stomach and bowels are kept in as good a condition as possible. The patient, to begin with, receives as many grains of antipyrin at bed-time as he is years old, and the dose is increased one grain each night until all twitching stops. At the beginning of the treatment of these mild cases I commence with one drop of Fowler's solution after each meal, and increase the dose one drop each day until the point of tolerance is reached; then the arsenic is discontinued for two or three days, or until all unpleasant effects of its administration have passed away, when the drug is again resumed at the dose reached when it was stopped. The dose is again increased one drop each day until tolerance is reached, when it is discontinued, and resumed after two or three days as before. As soon as the twitching ceases, the antipyrin at bed-time is discontinued, and the patient is given syrup of the iodid of iron after each meal, in from three to ten-drop doses, depending upon the age of the patient. The arsenic and iron are continued for two or three weeks after all symptoms of the disease have disappeared and the patient has regained considerable flesh.

In all except the mildest cases, to which reference has just been made, absolute rest in bed, day and night, is insisted upon from the first. If I had to rely upon one method of treatment in the management of chorea, to the exclusion of all others, I should unhesitatingly choose absolute rest in bed. When the little patient is placed in bed to begin its treatment (we will suppose it to be a child of a few years, or not more than fifteen years of age), I am in the habit of ordering as many grains of antipyrin,

three times daily, after taking food, as the child is years old, and increase the dose one grain each day until all violent movements stop, when I begin with one drop of Fowler's solution after each meal, well diluted in water, and increase the dose one drop each day, in the manner described. About the second or third day after the arsenical treatment has been added, the antipyrin is given only once each twenty-four hours, and the time for its administration is usually about 8 or 9 o'clock in the evening, thus securing a comfortable night for the little patient. After all but the most occasional twitching has stopped, the antipyrin is discontinued, and syrup of the iodid of iron is given in connection with arsenic. It seems a little heroic to give a child of seven years of age from ten to fifteen grains of antipyrin three times daily, yet I have given a child of eight years twenty grains of antipyrin three times daily, without the slightest apparent depression or untoward effect. Certain precautions, however, are necessary. In the first place, if there is any rise of temperature, perspiration will be free, and depression will result. I have learned to avoid antipyrin in cases in which there is much rise of temperature. In such, chloral hydrate takes the place of antipyrin. I have never carried the dose of the former to nearly that of the latter. When there is cardiac weakness, antipyrin and chloral should be given with great care, if at all. When such a complication exists, phenacetin, with a little cannabis indica, seems to quiet the patient. Valvular disease of the heart alone does not seem to contra-indicate the employment of antipyrin, but cardiac dilatation does.

Whilst antipyrin is being given the patient must be kept at rest in bed. I have seen considerable depression follow a large dose of antipyrin when the little patient has been allowed to run around. During the administration of large doses of antipyrin or chloral the patient should be seen at least daily, and the urine should be repeatedly examined.

The questions in regard to arsenic in chorea: How large doses may be given? How long should the drug be continued? Should it be kept at the point of tolerance for weeks without intermission, and what unpleasant effects are likely to follow its administration in large doses? are pertinent.

How large doses of Fowler's solution may be given? As a rule, children from seven to fifteen years of age will bear larger doses of arsenic than adults. So far I have never found it necessary to give very large doses to children under six years. In a number of instances I have given twenty drops of Fowler's solution three times daily to children from ten to fifteen years old, for a week or more at a time. In the majority of instances the point of tolerance is first reached when the dose has been gradually increased to some six or seven drops thrice daily. After stopping the arsenic for two or three days, or until all unpleasant effects have passed away, and resuming its administration at six or seven drop doses, as the case may be, the next point of tolerance will be attained when the dose has reached ten or twelve drops thrice daily. In most instances all twitching will have stopped at this time. If such be the case, the medicine is resumed after two or three days, at this dose, but now it should not be increased. It should be given at the dose tolerated when the twitching has stopped, for a week or ten days, then discontinued for two or three days, and resumed again at the full dose; the dose is now lessened one drop each day until four-drop or five-drop doses are reached; stopped again for two or three days, and again resumed at five-drop doses. Arsenic, as a rule, should not be continuously given in full doses for more than eight or ten days at a time. By observing this precaution I have been fortunate enough to avoid the ill-effects that some physicians have reported from the continuous use of full doses of arsenic.

How long should the administration of arsenic be continued after all twitching has stopped? As a rule, it should be continued for a month or more after all choreic symptoms have ceased, but not in full doses of toleration for more than a week or ten days, when it should be stopped for a few days; then the dose should be gradually reduced, as recommended.

The next question: Should the large tolerated doses be continued for weeks without intermission? has already been answered in the negative.

What unpleasant effects are likely to follow the administration of large doses of arsenic, even when the point of tolerance has been established by gradually increasing the dose from day to day? Seguin states that he has never seen any serious effects follow therapeutic doses of arsenic, although he gives some children as many as twenty-five drops of Fowler's solution thrice daily. Whether he takes the precaution not to use the drug continuously for more than a week or ten days at a time I do not know. So far, I have not seen any cases of neuritis following therapeutic doses of arsenic. Dr. Shattuck, of Boston, reports two cases of multiple neuritis following large doses of arsenic given for the relief of chorea. Dr. McGarvey, of San Luis, Colorado, informed me by letter a few days ago that he recently had two children paralyzed in the legs after taking large doses of arsenic for chorea. These were evidently cases of multiple neuritis. Neither Shattuck nor McGarvey states how long his patients had been taking arsenic without an intermission in the administration of the drug. Several other physicians have reported cases of

neuritis following the administration of arsenic for the relief of chorea.

In conclusion I will give brief reports of a few cases of chorea treated by antipyrin and arsenic in large doses.

CASE I.—Rose K., fourteen years old, of Austria, has been troubled with violent choreic movements (bilateral) for six months. She has been under treatment a portion of the time. The jerking of the limbs is so violent that it is difficult to keep her in bed. She is placed on fourteen grains of antipyrin three times daily, increased one grain each day. In four days, or by the time that eighteen grains of antipyrin are being given thrice daily, all violent muscular twitching is stopped. She is now given one drop of Fowler's solution thrice daily, and the dose is increased one drop each day, and the antipyrin is reduced to one dose of eighteen grains daily. In the meantime absolute rest in bed is insisted upon. At the end of the second week the choreic movements have nearly ceased, and by the end of the fourth week she is discharged, cured.

CASE II.—Helma B., thirteen years of age, has been suffering with violent choreic movements of the left side for three months. During this time she has been under treatment, but has been allowed to be up and walk around all day long. When she entered the hospital the twitching was violent. She is placed upon large and increasing doses of antipyrin and kept at rest in bed. In a week's time all violent movements have ceased. At the end of eighteen days she is now practically cured, under the antipyrin and arsenic treatment.

CASE III.—Charles R., fourteen years old, was admitted into the nervous ward of the County Hospital about two weeks ago. There was violent jerking of the muscles of all the limbs, and of the face. He had to be strapped in bed, as the irregular muscular action made it impossible for him, unassisted, to remain in bed. He states that he had been in this condition for six months. Articulation and deglutition are difficult. He is placed upon the same treatment given Cases I and II, with equally good results.

PRACTICAL REMOVAL OF HAIRS, MOLES, ETC., BY ELECTROLYSIS.

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THE theory of the removal of superfluous hair by means of the galvanic current is comparatively simple; it is to insert the needle attached to the negative pole of the battery into the hair-follicle, apply the current, and dissolve the tissues, when the thing will be done. However easy this may seem, when the physician tries to make a success of it in his everyday practice he finds it by no means so simple.

I shall try to give my views of how to make electrolysis a practical success, and will not speak so much from theoretic grounds as from practical, almost daily, experience during a period of over two years.

I have used a McIntosh cabinet, and also a portable battery of the same manufacture. For some months past I have been using a ten-cell Flemming battery, and have found this very satisfactory. The dry chlorid of silver battery would no doubt prove very serviceable as a portable battery, but it has the disadvantage of being difficult to repair, so that should it get out of order when one is not near a place where it could easily be repaired, the inconvenience might be very serious.

I have used steel and platinum needles, and prefer the latter. For some reason the platinum does not seem to irritate the tissues so much as the steel; being also more pliable, it enables the operator to curve it as he wishes, and thereby more easily insert it into individual hair-follicles, which often curve so that they would be difficult to follow with a straight needle, this curving of the hairs being especially marked in certain parts of the face.

The holder I use at present is also manufactured by Flemming, and consists of an end-piece, cone-shaped, with a longitudinal slit to hold the needle; this part is turned into the end of the holder, which covers the slit and holds the needle. I consider this holder far superior to that class in which the needle is held by a set-screw, this screw obscuring the vision when the operator attempts to insert the needle. Some holders are made with an interrupter in the shape of a button which must be pressed by the finger of the operator when the current is to be stopped. This does not seem to me to be a good arrangement, for the time when the current is to be discontinued is the time during which the needle is being inserted into the follicle; when that is to be done the operator must have as much freedom of movement as possible, as no considerable force should be used, but the needle should insinuate itself along the opening until the bottom of the follicle is reached, which will at once be noticed by the experienced operator. If force be applied in inserting the needle, this will probably be driven in too far, or passed through the side of the follicle, with a poor result in either case.

Having, then, a battery of the proper kind, cords, a finger-bowl for water, needle and holder, a pair of small tweezers, and a comfortable arm-chair with some appliance upon which the operator can rest his elbow, one has the essentials for the work. The chair should be placed where a good light will fall on the patient's face, a towel placed in the patient's lap, and upon it a finger-bowl about two-thirds full of water, in which is a sponge-electrode connected with the positive pole of the battery. The cord

attached to the negative pole is fastened to the needle-holder.

Let us suppose that the patient has not been under treatment before, and wishes hairs of medium size removed from the chin. The operator will turn on two cells, seat himself with his back to the light, and sufficiently close to the patient so that he will not have to exert himself in reaching; he will then insert the needle to the bottom of the follicle, then tell the patient to dip one finger into the bowl and keep it there until asked to remove it. In inserting the needle the holder should be held with the same gentle firmness that a pen is held, the third and fourth fingers resting lightly on the skin near the hair to be removed, so as to gently steady the hand. The operator will also find it a great help if he will rest his elbow on the arm of the chair, or some other support.

The first indication of results is a white froth, which makes its appearance at the mouth of the follicle, around the needle. Depending on the strength of the hair and the force of the current, the operator will judge whether the hair is loose. When he wishes to attempt its removal with the tweezers he will ask the patient to remove her finger from the water, and will then seize the hair with the tweezers and make gentle traction; if the hair makes any appreciable resistance the needle must be reinserted and the current again applied. When the hair is entirely loosened by the current a good result may be looked for. Should the hair offer resistance, the physician may insert the needle into the follicle after its removal and continue the current, but, as a rule, I have found it more difficult to insert the needle after the removal of the hair than when it is in situ.

After one has had experience he calculates almost unconsciously the length of time the current is required. When this faculty is acquired, cognizance is also taken of the strength of current and the particular person upon whom one is operating. I have also found that the patient can leave her fingers in the water constantly, and need not remove them unless I experience difficulty in finding the opening of the follicle. These things must all be taken advantage of, for in the long run, if properly utilized, they save much time, and thus shorten an operation which must always prove trying to both operator and patient.

No hard and fast rules can be laid down for doing this work, and each individual operator will be called upon to exercise his judgment in the case of each one upon whom he operates, and much of the time upon the individual hairs.

After what has been said in a general way of the operation, I will attempt to notice some of the features that should be avoided or should receive special attention. In the first place, the part operated upon should be surgically clean. Next the needle should not be inserted more deeply than the bottom of the follicle. Experience will indicate when the needle is at that point by a slight sense of resistance. Should the needle be inserted too far, considerable tissue may be destroyed, and still the hair will not be loose. Another thing to avoid is passing the needle through the side of the follicle, something which experience also teaches one to recognize by the touch. If this be done and the current applied, a white spot will begin to spread around the needle; the result with regard to the hair will be the same as in the former case, and in both a vesicle may form, with some exudation of serum, and with the danger of subsequent pustulation, and formation of a pitted scar.

Another danger is that of operating during a given time on hairs too close to each other. Here again the operator must fall back on his judgment, and take into consideration the size of the hair and the amount of electricity it takes to destroy it; also the regenerating power of the patient's tissues, which will be learned by observation. This rule may be laid down, that, until the operator becomes acquainted with his case, he must be sure not to take the hairs out when they are too close together. This is a matter of a great deal of importance, for frequently patients whose time and money are limited will urge the doctor to take out hairs that are too close together to be operated upon with good results in one day, or even on two successive days.

Again, the temporary inflammation which always sets in does not fully show itself until after several hours, so that a patient may leave the office with a face that shows comparatively little trace of the operation, but will return next morning with that part of her face in a very sorry-looking condition. I repeat that the importance of what I have just said cannot be overestimated, for upon proper attention to this matter may depend the success or failure of the operation, at least so far as the question whether or not the patient will have a smooth face after the hairs have been removed is concerned.

How long shall a patient sit at one time? This will depend upon how sensitive she is to the current. To illustrate: I have encountered only two cases in which patients complained of being unable to undergo the operation. One of these had been in the chair for several hours, and was obliged to discontinue treatment for that day. The other complained at the beginning, but was able to endure having all her superfluous hair and a couple of moles removed at the one sitting. As regards the duration of the operation, the amount of time at the disposal of the patient, and the extent of surface covered by the growth, are factors.

As a rule, all things being convenient, the best plan would be for her to take treatment for an hour and a half at a time, two or three times a week. When necessary, however, patients will sit for hours at a time without complaint. I have operated as long as seven consecutive hours in one case, but three hours is about as long as any patient cares to sit continuously, and this length of time will also try the operator.

The number of hairs that can be removed in an hour must necessarily vary, depending on much the same conditions that have been mentioned; but I believe a fair estimate will be thirty per hour, all classes of patients considered.

Patients are of all kinds, from the girl of sixteen or seventeen, who has noticed a few hairs on her face —usually on the upper lip at the corners of the mouth—which she knows or imagines that people notice, and which she supposes give her a masculine appearance. Next comes the older woman, who, to a practised eye, bears the unmistakable evidence of having a tendency to a hairy growth on the face; this she is making desperate efforts to conceal from the public by the use of tweezers or depilatories. Then there is the older woman still, who has passed fifty, and even sixty years of age, who, perhaps, even used the razor. Young or old, life is made unhappy by the disfigurement, and in some cases it means a life of misery if it is not permanently removed. A number of men also want hair removed for various reasons, but they are few compared with the women, and, in my opinion, the physician need waste no sympathy on them. That the disfigurement is very prevalent one can easily convince himself by taking special notice of the faces seen on any fashionable thoroughfare, and such cases deserve the consideration of the intelligent physician.

Can these hairs be destroyed by means of the electric needle, and leave no mark on the face? To the first part of the question I believe my experience will entitle me to answer in all cases, yes. To the second part, no. I believe that every time a hair is destroyed a scar is left, for by this process some of the tissue surrounding the hair is destroyed, and, as a consequence, we have cicatricial tissue formed. But I will say again that by proper care on the part of the operator, the marks left will in the majority of cases be so small that no one who does not know what he is looking for will be able to detect them; so that practically the hairs can be removed without leaving scars. In cases in which the hair is coarse and thick there is, of course, greater liability to scarring, and it seems to me that a great deal also depends on the healing powers of the tissues of different individuals. A certain, or rather uncertain, number of hairs will return, though in what proportion I am unable to say. The smallness of the number of returns, I am led to believe, will be in direct ratio to the skill of the operator. The trying cases often take such a long time to finish—for reasons that will be plain to those who have read this—that it is difficult to follow them up. I have in mind four cases, three of which were very severe, the fourth one the worst I ever operated upon. Two of these are entirely cured, several months having elapsed since the last operation, with no return of the trouble. The third case, a very severe one, is also practically rid of the trouble, while the fourth is still under treatment, with every indication that her face will soon be in good condition. Perhaps the best criterion as to whether or not the work is a success is the fact that these cases persist in the treatment for months and years. The last case I mentioned has been under treatment, off and on, for nearly two years. Some idea of the amount of work a severe case requires may be gained from the fact that since the 25th of April, 1892 (now February 1, 1893), I have spent *eighty-six* hours operating on the face of the last-mentioned patient.

Another use to which I have put electricity in the form of the galvanic current is the removal of moles and enlarged cutaneous bloodvessels, such as are frequently seen on and around the alæ of the nose and also on the body of that organ. For convenience, I divide moles into two classes, not that the appliances for removing them are different, but that the *modus operandi* differs somewhat in each. The apparatus for removing moles is the same as that used for the removal of hair, with the exception of the tweezers.

The first class is the very common disfigurement called liver-spots, which are really pigmentary moles, or perhaps, exaggerated freckles. They are little, if at all, elevated above the surrounding surface. The method of procedure in the case of these is as follows: The patient and operator take the same positions as in the removal of superfluous hairs, the parts to be operated upon having been thoroughly cleansed The operator now inserts the needle at the edge of the mole, just beneath the epidermis, applies the current, which should be weak, and gradually passes the needle through the growth. As the electrolysis goes on it will be observed that a loosening of the pigment takes place, and it mixes with the froth around the needle. The needle must now be worked over the entire area of the mole, taking care to go no more than deeply enough to loosen the pigment. After a few seconds the burning sensation that accompanies the insertion of the needle ceases, in consequence of the local anesthetic effect following the application for a limited time of a comparatively weak current. The whole operation can be completed with only one puncture of the epidermis,

although in small moles that is a matter of little consequence. The pigment and dissolved tissue are now left to dry into a crust, which comes off in a few days, leaving a bluish-red spot, as always happens when a bit of the epidermis has been scraped off, and which later becomes the color of the surrounding skin.

The next class of moles includes those that are elevated above the surrounding surface, and which frequently contain a number of hairs. As a rule, the first thing to do is to remove the hairs, which, if few, can be done at the same sitting the mole is operated upon, and in the manner described in the first part of this paper. It is very essential that the surgeon, when operating on moles raised above the surface, should constantly bear in mind the object which he sets out to accomplish, namely, to bring the elevated spot down to a level with the surrounding surface. Great care must be exercised not to bring it below, for in that event a mischief is done which no method I know of can cure. The larger the mole the greater the liability to pitting if due precautions be omitted. In this class of moles the needle is inserted at the base of the growth and gradually passed through it, and may be passed out at the opposite side. This is repeated until the whole base has thus been treated, the object being to cut off the circulation by electrolyzing the blood-vessels at the base of the growth.

The first sign produced in the mole will be a gradual whitening of that part external to the needle, which finally reaches an appearance of complete anemia. The electrolysis must continue until the circulation is entirely cut off. Inside of twenty-four hours the whiteness will have disappeared and be replaced by a black color. There soon follows a dried, hard crust, the time depending upon the size of the mole, which falls off in a few days, leaving a discoloration that gradually disappears.

As a rule, it is not advisable to attempt to remove a mole at one sitting, unless it be quite small, for fear of leaving a scar. If moles be large there may be some oozing of serum during the operation, but that is a matter of little consequence, and a little dusting powder may be applied after the operation.

When it is decided that a mole is to be removed, the operator, before he begins, must fix in his mind how deeply he should penetrate, for there is likely to be some swelling around the margin, and he will have only his memory to rely upon to guide him. For that reason it is advisable not to attempt to remove the whole of the mole at one sitting, but to destroy a given amount. Then, after the crust has come away, the edges, or any part, may be trimmed down very easily, without any danger of going too far in, as might be the case did one try to remove a comparatively large growth at a single sitting.

Occasionally small pedunculated moles are found on the eyelids, which may be removed as the others are, and, if the operation be properly done, without any inconvenience to the patient.

I have occasionally been called upon to destroy enlarged bloodvessels in and around the region of the nose. To do this the needle is inserted into the vessels at their largest part, and the current turned on. Almost immediately a white substance will be seen to make its way along the vessels, distinctly outlining them. The vessel-walls must be destroyed throughout the whole extent, the needle being inserted at intervals along their course. The operator should experience little difficulty in doing this, as he can see his work. The greatest trouble he will have will be the extreme sensitiveness of the part, which frequently manifests itself in an uncontrollable desire to sneeze, though frequently the pain is severe in operating in the region of the nose, as also in removing hairs from the upper lip.

I applied cocain in one case when operating on the mucous membrane of the anterior nares, but it did not seem to deaden the sensation. I think, however, that cocain ought to be successful in these cases, and intend to try it again when the occasion arises.

In operating upon enlarged cutaneous vessels, it follows, as a matter of course, that the operation must be thorough; in other words, the current must be applied until the vessel-wall is destroyed.

I have also used electrolysis in two severe cases of ingrowing eyelashes — trichiasis-distichiasis — both upper lids being involved in one case, and one lid in the other. I cannot report on the ultimate effect of the operation, for I lost sight of both cases before sufficient time had elapsed to show definite results. I can say that the removal of the hairs may be accomplished more quickly than one would at first think. In one of these cases I removed all of the hairs from one lid at one sitting, with the result that when the patient returned a week later to have the hair removed from the upper lid of the other eye, he declared the eye that had received the first attention felt better, and he could see better with it than he had been able to do for a long time.

I used cocain, operated on the worse eye first, which, in consequence of the irritating hairs, was nearly blind. The patient was seventy years of age, and far from strong. I did not see him again after removing the hairs from the other eye.

In closing I will recapitulate as to certain things which must always be borne in mind in performing any of the operations I have mentioned:

1. Do not begin with too strong a current.

2. Apply the current for a sufficient length of time.

3. Always apply the negative pole to the part it is desired to destroy.

4. Do not have the circuit closed when you insert the needle until you have learned to know your patient *electrically*, if such use of the word may be permissible.

5. Always test the strength of your current before beginning. To do this I have found a convenient way is to touch the two poles to my tongue, having the points about an inch apart.

THE SURGICAL TREATMENT OF CHRONIC TYMPANIC VERTIGO, OFTEN MISCALLED MÉNIÈRE'S DISEASE.[1]

BY CHARLES H. BURNETT, M.D.,
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CHRONIC tympanic vertigo, the most frequent form of aural vertigo, is one of the results of chronic catarrhal otitis media. It is always found in connection with tinnitus aurium and deafness, still commoner results of chronic aural catarrh. Unfortunately, chronic tympanic vertigo usually receives the very unjust and inaccurate designation of Mênière's disease.

The latter term, if it means anything—and it has but a very slender title to the wide acceptance it has met with in medical nomenclature—means a form of aural vertigo due to disease of the semi-circular canals. Disease of these canals, however, is very rare, and difficult to diagnosticate.

The name "Ménière's disease" is *inaccurate*, because it is indiscriminately applied to all forms of aural vertigo, regardless of the seat of the otic lesion, whereas Ménière attempted to prove the existenee of a disease of the semi-circular canals as the only cause of aural vertigo, an entirely untenable hypothesis. The name is *unjust*, because Flourens in 1822, and Deleau in 1836, described aural vertigo more acccurately than Ménière in 1861,[2] and Deleau came much nearer than any previous observer to the solution of the cause of most cases of aural vertigo in placing the origin *in lesions of the middle ear.*

Tympanic vertigo, due to lesions in the middle ear, is of frequent occurrence. It is often not recognized, especially by the general practitioner, as aural vertigo. It is not unusual for tympanic vertigo to be attributed to intestinal disturbance, or to "neurasthenia," instead of to an aural lesion. Hence, the diagnosis being erroneous at the outset, the treatment is wrong, and the patients do not recover.

True tympanic vertigo, due to a lesion in the middle ear, chiefly from chronic catarrh of the tympanic cavity, is paroxysmal in character, and attended with tinnitus and deafness in the affected ear. It is caused by the inward pressure exerted upon the labyrinthine fluid by the retracted and ankylosed ossicles. The foot-plate of the stapes is thus unduly pressed into the oval window, and there held by the force named, paroxysmally and for longer or shorter periods.

I have long maintained the tympanic or mechanical origin of most cases of aural vertigo, in opposition to the asserted neuropathic, or labyrinthine cause.[1]

In chronic catarrh of the middle ear there must always be, sooner or later, a disturbed tension in the conductors of sound, whereby at times the membrana tympani and the three auditory bonelets are carried unduly inward, and exert a morbid pressure by means of the impacted stapes upon the fluid in the labyrinth. This irritation in the labyrinth being communicated to the motor filaments of the auditory nerve is reflected by them to the cerebellum, and disturbed equilibration is the result.

This morbid retraction of the auditory chain, and resultant cerebellar irritation, are not constant, but vary with the state of the general health and the condition of the catarrhal middle ear. Hence all true aural vertigo of tympano-mechanical origin is paroxysmal in form.

If the theory is correct that the vertigo in chronic catarrh of the middle ear is due to the retraction of the conductors of sound and mechanical pressure upon the labyrinthine fluid, then the surgical removal of such retraction and pressure ought to relieve tympanic vertigo.

No opportunity to test the truth of this theory offered itself until May, 1888. Then, being consulted by a former patient with chronic catarrh of the middle ear, for the relief of constant tinnitus, and oft-recurring attacks of *severe tympanic vertigo*, which had been superadded to her deafness in the left ear within the previous two years, and finding that the malleus had become adherent to the promontory, I resolved to do what, so far as I know, had never been done for the relief of aural vertigo of a mechanical or tympanic origin, viz.: to cut out the membrana tympani and the malleus, in order to liberate the impacted stapes.

This case and the entire success attending the operation have been fully detailed in other places.[2] I would like to state here that the entire relief from tinnitus and vertigo, which followed immediately upon the operation five years ago, has continued to

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[1] Read by title and synopsis at the meeting of the American Otological Society, July 19, 1893.

[2] Gazette Médicale de Paris, September 21, 1861.

[1] "Aural Vertigo." Philadelphia Medical Times, June 3, 1882.

[2] The Polyclinic, August, 1888; The American Journal of the Medical Sciences, February, 1889, and the Transactions of the American Otological Society, 1890.

the present time. All the operations referred to in this paper were performed upon the etherized patient, the ear being illuminated by a six-volt electric lamp, held on the operator's forehead.

The operation of excision of the membrana tympani with the malleus was applied in four succeeding cases of chronic tympanic vertigo with entire relief in all of them.[1] However, as in all of the cases more or less inflammatory reaction followed this operation, I concluded that removal of the incus alone, or of the incus and stapes, the membrana tympani and the malleus being permitted to remain in position, would liberate the stapes and the compressed labyrinthine fluid, as well as, or perhaps better than, total excision of the membrana and the malleus, and probably would not be followed by inflammatory reaction. And the notes of the following cases will show that I was correct in my assumption.

The first case to which I would call attention was described in detail as Case V, in THE MEDICAL NEWS, of March 13, 1893, not as one in which tympanic vertigo was at all prominent, or in which the operation was performed chiefly for the relief of that symptom. The prominent symptoms were dulness of hearing and annoying tinnitus, and to relieve these the operation of removal of the incus and stapes was undertaken. But as there had been some slight vertiginous attacks, and as the operation was successful in relieving the deafness and tinnitus, and preventing the recurrence of further attacks of even slight tympanic vertigo, it may be regarded in this instance as at least a prophylactic of pronounced tympanic vertigo.

The next case was described as Case VI, in THE MEDICAL NEWS of March 13, 1893.

This is the only case in the series in which the stapes was removed entirely. The result was so good —in fact, so much better than in some in which the stapes was only liberated or only its crura were removed, that I am inclined to think that in any case of tympanic vertigo in which liberation or partial removal of the stapes does not give as much relief as is desired, *puncture of the foot-plate* of the stapes, in order to relieve the labyrinthine tension, would be justifiable.

CASE VIII. *Removal of the left incus for aggravated chronic tympanic vertigo.*—Mrs. T. R. G., aged fifty-five, the wife of a physician, has had chronic catarrhal otitis media since childhood. The tinnitus has increased of late years, and she has been treated for years, by a prominent physician, for neurasthenia. Within a year or two marked tympanic vertigo has set in, and increased to *weekly* attacks, quite laying her up in bed when a paroxysm occurred. These attacks usually have come on in the house, sometimes in bed, but once lately the patient was attacked while out driving. The attacks of vertigo were attended with increased tinnitus, nausea, and vomiting, without loss of consciousness, the face and forehead being bathed with cold sweat. There has never been any rational aural treatment in this case. The patient has been treated with purgatives and alteratives for "neurasthenia," and has grown steadily worse.

Examination of the left ear revealed a retracted membrana tympani, with signs of sclerosis of the drum-cavity. The incus and stapes were visible through the membrana. No catarrh of the nares or naso-pharynx. Tuning-fork heard *per ossa* in the affected ear. Loud words could be heard near the ear. The right ear is good, but said to be failing lately.

As the attacks of tympanic vertigo had now become so well marked, and so distressing, her husband had determined to seek relief for her by means of the removal of the force impacting the stapes in the oval window. Therefore, on June 7, 1893, the patient was etherized, and after excision of the posterior, superior quadrant of the membrana, the incus, though held tightly in place by synechiæ, was quickly removed. The stapes was found firmly and immovably fixed in the oval window, and could not be removed, its head being broken off in the endeavor.

There was no reaction in this case, and the patient went home, a hundred and fifty miles away, on the third day.

On June 25, three weeks after the operation, her husband wrote that "she has been getting on so well that we have some how failed to report to you of her general improvement. The first week after the operation she had several very *slight attacks* of vertigo, but they passed off very soon, and of late she has had no trouble whatever." She has been able to go about the house attending to her duties, without the fear even of the hindrance previously experienced from the attacks of tympanic vertigo. The tinnitus became much less, and the hearing improved a little. But the great end had been attained, viz: the relief from the sickening and incapacitating tympanic vertigo.

On August 8, 1893, her husband wrote that there had been some attacks of slight vertigo since his last letter, but nothing severe. Before the operation the patient had been bed-ridden by the severity and duration of the vertigo. September 10th. The patient remains free from vertigo.

CASE IX. *Removal of the incus only.*—Sister ——, a nun, twenty-five years old, has for several years suffered from tinnitus, deafness, and tympanic vertigo, due to sclerotic otitis media of the left ear, following a chronic purulent otitis media, which latter ceased years ago. There was a perforation of the posterior inferior quadrant, with calcareous patches in the upper posterior and upper anterior quadrants of the membrana. The tuning fork was heard well *per ossa*, and isolated words were heard *close* to the ear.

June 28, 1893, the patient was etherized, and the perforation enlarged and extended into the upper posterior quadrant, exposing the incus lying high up in the attic. The incus was then removed.

[1] International Clinics, January, 1892.

The next day the hearing for isolated words in ordinary tone was two feet, and for whispered words from eight to ten inches. The patient was not seen again until July 20, 1893, when she reported that there was no more tinnitus or "swimming in the head." There had been no return of these symptoms by September 1, 1893. The result in this ear has been so good that a similar operation is contemplated for the relief of dulness of hearing and tinnitus in the other, the better ear.

Case X. *Resection of the long processes of both incudes for the relief of deafness, tinnitus, and severe chronic tympanic vertigo.*—Mr. Charles C. T., aged thirty-one, of Baltimore, Md., has been affected with chronic catarrhal otitis media in the right ear for eight years, and in the left ear for four years. Within a year the tinnitus has become severe in both ears, and the hearing has failed in both, the left ear being a little better for hearing, however, than the right ear. In addition to these symptoms there had been superadded the tendency to attacks of tympanic vertigo, with temporary increase of tinnitus aurium in both ears at the time of the vertiginous paroxysms. So severe have the latter been as to require the patient to hold on to the nearest objects in the street to prevent him from falling. He has never vomited, however, in any of these attacks, but their severity and frequency have dispirited him, and prevented him from attending to his duties. For many months past the patient has been treated for an *asserted* catarrh of the nares, naso-pharynx, and throat, but the deafness, tinnitus, and vertigo have grown worse rather than better. Examination, June 18, 1893, revealed the membranæ tympanorum slightly retracted, the incudes and stapes visible through the membranes. The nares, naso-pharynx, and fauces were not affected.

July 21, 1893, the patient was etherized, and I endeavored to remove first the right, and then the left incus, after their exposure by exsection of the posterior, superior quadrants of the membranæ.

The right incus seemed firmly held in the attic, and when traction was made on the long process it quickly broke off. No further attempt to remove the body of the incus was made, as the object sought, viz.: severance of the retractive power of the incus from the stapes, had been attained. I met with the same experience on the left side.

The next day there was a slight reaction in both ears, the tinnitus was no better, and the hearing was perhaps a little duller in the *left*, the better ear. There was no vertigo.

The patient returned to his home now, and reported to me in the course of four days that he had had no vertigo, but he felt worse in his ears, and that he had had some fugitive pains in them, with a little bleeding from one.

August 11th. The patient reported "a slight improvement in hearing in the left ear, but none in the right." The tinnitus still continued, but there had been "an entire absence of vertigo." The left ear had pained him "quite a good deal, and felt uncomfortable for the past day or two."

August 13th. The patient's sister, a physician, reported to me that there had been an "evident improvement in his hearing in the last ten days." Also a great improvement in his spirits.

September 3, 1893. The patient wrote that "the hearing in my left ear is much improved. I can hear conversation in ordinary tones about four feet, and if loud about ten feet. If the windows are open I can hear calls on the street. There is scarcely any roaring in the left ear, but in the right (the deafer ear), though diminished, there is quite a good deal. The hearing in the right ear seems to be about the same as before the operation." There has been no return of the attacks of tympanic vertigo. The perforations in the membranæ tympanorum persist.

It is noteworthy that in this case relief followed the severance of the retractive force by resection of only the long processes of the incudes; also, that most improvement in hearing and relief from the annoying tinnitus ensued in the better ear. This is due to the fact that greater mobility of the stapes has persisted in this ear than in the worse ear, and hence liberation of the freer stapes and the passive motion exercised upon it by sound-waves, have greatly improved the function of hearing in this ear. The result in this respect should encourage the surgeon to operate on both ears, or upon the better rather than upon the worse ear alone, when both are so profoundly affected as in this case. Most important is it to observe the *progressive improvement* in this case, as in some of the others. This must be due to the passive motion exerted upon the ankylosed stapes by sound-waves, which fall upon it more freely than before the operation.

From all the ten cases we may conclude:

1. That removal of the retractive force of the sound-conductors upon the stapes is the efficient means of relieving the tinnitus, deafness, and vertigo, due to the lesions of chronic catarrh of the middle ear.

2. That the removal of the retractive force upon the stapes can be accomplished efficiently and simply by removal of the incus alone, and even by resection of its long process.

3. That the improvement in these cases is due to the liberation of the stapes from the retractive power of the tensor tympani muscle, and the consequent unimpeded action of the stapedius muscle, which, relieved of the antagonism of the tensor tympani, tends all the more to draw the stapes from the oval window, thus aiding in the isolation and improved mobility of the bonelet, as well as in removing its undue pressure inward upon the labyrinthine fluid.

4. It would seem wiser, therefore, in most cases of chronic catarrhal deafness, tinnitus, and vertigo, not to sever the stapedius tendon and remove the stapes, but to be content with removal of the incus only.

5. The progressive improvement in hearing noted

in many instances, especially in Case X, must be due to the passive motion exerted upon the ankylosed stapes by sound-waves, which are enabled to reach this bonelet more freely after the removal of the incus.

PARESTHESIA OF THE PHARYNX AND LARYNX AS A PREMONITORY SYMPTOM OF TUBERCULOSIS OF THE LUNGS.[1]

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PARESTHESIA of the pharynx and larynx is an affection often encountered by the laryngologist, and the etiology which suggests itself to his mind is, primarily, hysteria and hypochondria, and secondarily the results of injury to the mucous membrane from the swallowing of some hard substance. That these are etiologic factors in a large percentage of the cases of paresthesia of the pharynx and larynx is established beyond doubt; in fact, most of the modern text-books mention no other cause.

To cite but a few instances: Bosworth, in his late work on the *Diseases of the Nose and Throat*, has a very unsatisfactory, brief article on this affection, and he believes that most cases of paresthesia can be traced to some local pathologic condition. This same view is also most strongly upheld by Lennox Browne in his well-known text-book.

It is true, Bosworth does mention that the affection occurs in anemia and pulmonary tuberculosis, and in individuals of nervous temperament, but in such a cursory manner that the reader perceives that he lays very little stress on the subject.

As another example, take Schrötter's *Vorlesungen über die Krankheiten des Kehlkopfes*, etc., published within a year. This author states that most cases of paresthesia of the larynx are due to injuries produced by swallowing some hard substance; hypochondria and hysteria come next, and anemia is casually mentioned among the causes. Without quoting any more authorities, except to say that Mackenzie, with his wide experience, merely mentions a nervous and traumatic etiology, which would simply be a reiteration of what has been said before, allow me to call attention to but one more text-book on this subject. Gottstein, in his *Krankheiten des Kehlkopfes*, which by the way is certainly the most excellent treatise on this subject extant to-day in any language, calls attention to the fact that paresthesia of the larynx is one of the frequent symptoms of the early stages of tuberculosis of the lungs.

The first one to call attention to this fact was, I believe, Jurasz in his monograph on the subject of "Sensory Neuroses of the Pharynx and Larynx." This was published as early as 1881, but it seems that the subject has not received the attention which its importance demands.

In his monograph, Jurasz remarks that these cases of paresthesia are "relatively not rare complications of beginning tuberculosis of the lungs." As mentioned before, Gottstein's observations coincide with those of Jurasz, and as far as my personal experience goes, which I admit is not very extensive, I have seen at least half a dozen cases of paresthesia of the pharynx and larynx in the past three years, whose causation could be traced to no other source than probable beginning tuberculosis of the lungs. The history of several of the cases afterward positively proved the correctness of my supposition.

As regards the symptomatology of this affection I can be brief. Paresthesia of the pharynx and larynx manifests the same indefinite and varied subjective sensations that characterize this peculiar symptom as an accompaniment of so many nervous affections, such as tabes dorsalis, cerebro-spinal sclerosis, etc. The patients complain of pain, which they now locate in the region of the larynx, now in the tonsil, now in the tongue, now on one side and now on the other. The abnormal sensation is never constantly present in a definite locality. Again some patients complain of the most peculiar and unheard-of sensations of tickling, scratching, burning, pricking, numbness, dryness, etc. Schrötter mentions the case of a patient who said he had a sensation as though "a mouse had run through his throat." As is so universally the case in sensory neuroses of the body in general, the perverse sensations complained of are peculiar and preposterous in direct proportion to the morbid imagination of the patients. The only definite thing in the history of this class of cases is the indefinite character of the symptoms; that is, the uncertainty on the part of the patient of localizing and describing the perverse sensations and the oftentimes changing character of these sensations.

Besides these sensory neurotic symptoms, there are also present at times paroxyms of cough, in the vain attempts to remove the irritation felt by the patients. There are also present at times motor neurotic symptoms, like contractions of the laryngeal and pharyngeal muscles, which are very disagreeable to the patients.

Coming to the most important part of my paper, the differential diagnosis of the various kinds of paresthesia of the pharynx and larynx from the etiologic standpoint, I shall try to be brief and give you succinctly the most important symptoms that characterize this affection as an accompanying,

[1] Read in part before the Ohio State Medical Society, Put-in-Bay, Ohio, June 29, 1893.

and particularly as a premonitory, symptom of pulmonary tuberculosis.

In every case of paresthesia of the pharynx or larynx a most careful local examinaton must be made, to exclude any local pathologic condition as a cause for the paresthesia. It is hardly necessary to add that, particularly in nervous individuals, a naso-pharyngeal catarrh, a chronic pharyngitis or laryngitis, or even the tiniest of those almost universally-present granulations on the posterior wall of the pharynx, or hypertrophy of the lingual tonsil, may produce paresthesia. All local causes must therefore be first excluded.

The hysterical cases are generally easily excluded from the history, and from the fact that there is usually present in almost all of these cases the well-known globus hystericus.

The hypochondriac cases are more difficult of exclusion. They are generally found in otherwise healthy individuals who use their voices professionally, *e. g.*, teachers, singers, clergymen, etc. Another class of these hypochondriac patients are the syphilophobes who constantly imagine that syphilis is manifesting itself in their throats. I have under observation a very striking example of this kind. A patient visits me regularly several times a year, complaining of a peculiar train of symptoms—tickling, pricking, drawing, etc. Still I have never been able to find anything abnormal. The man is perfectly healthy, but he had a chancre several years ago. He is fearful that syphilis will "break out" in his throat, and he comes to me several times a year for consolation.

As regards the class of cases due to injury of the mucous membrane produced by swallowing some hard substance, when the patients complain of the sensation of a foreign body in various portions of the throat, the history of the cases will generally give us a clew as to the character of the paresthesia. The patient can generally state definitely when the peculiar symptoms were first noticed, and their beginning can then in most cases be traced to an injury produced by swallowing some substance which, by its irregularity or hardness, wounded the mucous membrane of the throat. This wound or injury, which may be so slight as to escape detection, on even the most careful examination, may give rise to the sensation of a foreign body in the throat. These painful or disagreeable sensations can, as a rule, be perfectly localized by the patient, and their locality does not vary. A most careful examination of the entire throat and naso-pharynx must be made, so as to be positive that there really is no foreign body present, and after this is done, appropriate measures should be used to remove as speedily as possible the inflammation and irritation following the injury. But there are cases of so-called imaginary foreign bodies in the throat, in which the peculiar sensations complained of by the patient cannot be traced to any injury of the mucosa or to the presence of a foreign body. These cases generally occur in anemic individuals, particularly women. They are very refractory to treatment. I am inclined to believe that the majority may perhaps be included under that category of paresthesia of the throat which is premonitory of tuberculosis of the lungs.

Allow me to give in brief the history of only two cases of this nature. I believe this will best bring out the points in the differential diagnosis that I wish to make. In the first case the paresthesia was an accompanying symptom, in the second case it was a premonitory manifestation of pulmonary tuberculosis.

CASE I.—About three years ago a man of twenty-five years of age was sent to me for treatment. For the preceding few months he had noticed the following symptoms: A peculiar, indefinite sensation of pain and burning in the various regions of the throat, now in the palate, now far back in the pharynx, now on one side of the larynx, now on the other. He could not state definitely either the cause or the time of the beginning of these symptoms. He also coughed occasionally. There was a history of tuberculosis in the family. A careful examination of the nose, naso-pharynx, pharynx, and larynx revealed nothing abnormal outside of a slight redness of the true vocal bands; but as the man used his voice considerably, this was not surprising. An examination of the lungs revealed a moderate degree of apical catarrh on both sides; there was also slight rise of temperature, 99.5° F., and some acceleration of the pulse—84. In view of the family history, the physical signs in the lungs, the elevation of temperature and acceleration of the pulse, a diagnosis of beginning tuberculosis of the lungs was made. The patient was given creosote in increasing doses, was ordered to take plenty of nourishing food, and was given the well-known instructions ordered to patients with beginning pulmonary tuberculosis. No treatment was ordered for the throat. In four weeks the paresthesia disappeared, and, except for some slight recurrences, has not returned for two years. The patient is now practically well.

CASE II.—A woman, aged about twenty-six, came to me about four months ago. She was sent for an examination of her throat. She complained of pain in the throat for about three months past, with some cough and occasionally spasmodic contractions of the muscles of the larynx and neck, so that she sometimes had difficulty in breathing. This was, however, only momentary. The pain and "drawing," as she termed it, were not constant, nor were they always on the same side. Sometimes these symptoms disappeared for a week at a time, when the cough also disappeared with the pain and contractions. The physician who had sent her to me had made an examination of the lungs, but had found nothing abnormal. I also

found no abnormality. The throat was absolutely normal; there was not even anemia of the structures. After much questioning the patient remembered that some distant relative of hers had died of tuberculosis. To do something I gave the patient creosote in moderate doses, four grains per day. So as not to prejudice her mind, I told her that her throat-affection was a nervous trouble and would probably last a long while. Two weeks later the patient informed me, without any interrogation on my part, that the paresthesia was considerably improved. I increased the dose of creosote to six grains daily, and four weeks later the patient informed me that while the paresthesia was still occasionally present, it was much improved. The patient has gained in weight, looks better, and has a better appetite.

In brief, then, the cases of paresthesia of the throat which are premonitory of tuberculosis of the lungs are characterized principally by uncertainty on the part of the patients as to the cause and the time of beginning of their symptoms. Then in cases of anemia of the throat, in combination with the paresthetic symptoms, this condition should be thought of, although, as I shall mention later, anemia of the tissues of the throat is not an absolutely necessary condition in this class of cases.

This condition should also be suspected in all cases in which the patient has the well-known *habitus phthisicus*, or in which there is a tuberculous family history, and finally in all cases which cannot be definitely traced to an injury of the mucosa, or which are not positive types of the hysterical or hypochondriac varieties.

As regards the pathology of this affection we must honestly say "ignoramus." We do not know the reason why in the beginning stages of tuberculosis of the lungs there should be these peculiar nervous manifestations in the throat. Jurasz has attempted an explanation and calls these paresthetic manifestations "reflexempfindungen" (reflex sensations). He explains their causation by transference of the irritation produced by the pulmonary changes on the sensory fibers of the nerves in the lungs to the centripetal fibers (*i. e.*, the sensory fibers) of the pharyngeal and laryngeal nerves. He says that this theory is rendered plausible by the fact that these fibers are branches of the same nerve, the pneumogastric, which, it is well-known, distributes sensory fibers both to the lungs and to the pharynx and larynx, and also motor branches to the muscles of the latter. This attempted explanation is still an unsubstantiated theory, and, while very probable, we must confess that we do not to-day know the true reason for the presence of paresthesia of the throat in the early stages of tuberculosis of the lungs.

Gottstein lays stress upon his observations that all of these cases occur in anemic conditions of the pharynx and larynx, and hence he considers the paresthesia as a tropho-neurosis. This certainly does not hold good in all cases, for Jurasz declares that there are cases of paresthesia of this kind in which there is absolutely no anemia, and that it occurs in the very earliest stages of tuberculosis of the lungs, in cases in which positively no abnormality can be detected by the most careful examination —and which later by their history proved to be cases of pulmonary tuberculosis—and in which there had not yet been sufficient time for the anemia of the throat to have supervened.

I can corroborate this statement, for in the second case here detailed there was absolutely no anemia of the throat and no apparent abnormality in the lungs. Still I am convinced that this is one of those cases of paresthesia accompanying the initiatory stage of pulmonary tuberculosis, in which the changes in the lung-tissues are so slightly developed as to escape detection by our present methods of examination.

If we feel convinced that the paresthesia is due to or accompanies the initiatory stage of tuberculosis of the lungs, the prognosis is generally favorable. That is to say, if the pulmonary pathologic conditions can still be inhibited or made to disappear by appropriate treatment, the paresthesia will in time disappear in the great majority of cases. Still there are some cases which will persist in spite of any and all treatment. As regards the treatment, local measures should be entirely discarded. They are of no avail, and it is simply a waste of time and energy to persist in their use.

It would be "like sending owls to Athens" were I to attempt to bring forward any arguments to-day in behalf of the employment of creosote in the treatment of tuberculous affections of the lungs, especially in the early stages. I have seen most excellent results in quite a number of cases of tuberculosis of the lungs in their early stage from the administration of creosote, and I consider it the remedy *par excellence* in these cases, both uncomplicated and complicated with throat-affections.

I consider the paresthesia of the throat as one of the complications of pulmonary tuberculosis, even in those cases in which no physical changes can be discovered in the lungs by auscultation and percussion, and I would advise the use of creosote in gradually increasing doses as the remedy that to-day gives the best results in these cases.

To recapitulate: Paresthesia of the pharynx and larynx is not a rare accompaniment of the early stages of tuberculosis of the lungs. In those cases in which no physical signs can be found in the lungs, it should be considered a premonitory symptom of tuberculosis of these organs: (1) if there is tuberculous family history; (2) if the paresthesia cannot

be definitely traced to a foreign body, or an injury produced by such an agency, or by the swallowing of some hard substance; (3) in the cases of imaginary foreign bodies of indefinite etiology, with the presence of anemia; (4) in all those cases which cannot be positively placed under the head of hysteria or hypochondria. Finally, these cases are best treated by the internal administration of creosote, without the use of any local treatment.

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CLINICAL MEMORANDA.

PRELIMINARY NOTE ON THE PRONOUNCED EFFECT OF THE ENDERMATIC USE OF GUAIACOL IN CONTROLLING HIGH TEMPERATURE IN TUBERCULOSIS.

BY J. SOLIS-COHEN, M.D.,
OF PHILADELPHIA.

HAVING noted remarkable statements in the French journals as to the antipyretic and other effects of guaiacol used endermatically in tuberculosis, and having had my attention called to the statement about the same time by a medical friend with whom I was seeing a case in consultation, we determined to try the method in that instance. The result was marked, and the case will be duly reported by the physician in charge.

Then the same treatment was tried under my directions upon two of my cases in the Home for Consumptives at Chestnut Hill. The result was very encouraging, as will be seen from the following record, chiefly from notes by the resident physician, M. Hannah McKirachan.

CASE I.—Mrs. F. September 3d, 3 P.M., temperature 102.4°. Guaiacol, ℥xxx, was well rubbed into the skin over the cavities for eighteen minutes. 3.33 P.M., temperature 99.3°. 5.00 P.M., temperature 97.4°. The patient was perspiring copiously, especially in the groins. The pulse was good, the body warm. 6.15 P.M. The patient was chilly, the finger-tips blue and cold. Heat was applied to the extremities. 6.35 P.M., temperature 97.4°. Then the temperature gradually rose to a little above normal.

The patient felt well and looked well and bright when I saw her the next day. She had not been as near collapse as a patient in private practice had been reported a few days previously. She described the cold feeling as having been similar to that following the evaporation of the vapor of menthol from the skin. Her appetite was good. Her cavities, for the moment, were dry. The temperature did not rise to 102° again for several days, and when it was noted, September 9th, 3.00 P.M., it was 102.4°. Guaiacol, ℥xxv, was painted over the cavities with a camel's hair pencil for fifteen minutes until it was all apparently absorbed. 3.30 P.M., temperature 102°. 3.45 P.M., temperature 101°. 4.00 P.M., temperature 97.4°. Pulse was good. Perspiration was free. No sign of tendency to collapse. Again there was freedom from excessive rise of temperature for several days. September 14th, 3 P.M., temperature 103°. Guaiacol, ℥xxv, was painted over the cavities. 3.30 P.M., temperature 101.6°. Perspiration was free. 4.00 P.M., temperature 100.2°. 4.30 P.M., temperature 99°. 4.50 P.M., temperature 97.4°. 5.30 P.M. The patient was feeling comfortable, and went to the dining-room for supper.

CASE II.—Mary F. September 12th, 2.10 P.M., temperature 102.4°. 2.45 P.M., guaiacol, ℥xx, was painted upon the skin over the diseased portion of the lungs. 3 P.M. The patient was perspiring a little, especially about the head. 3.25 P.M., temperature 101°. 3.40 P.M. Perspiring profusely. 3.56 P.M., temperature 101°. 4.00 P.M., temperature 100.2°. 4.30 P.M., temperature 99.2°. 5.00 P.M., temperature 99°. 5.15 P.M. Slight chill. Heat was applied externally. Temperature 99.4°. 5.40 P.M., temperature 99°. Lips blue. 6.35 P.M., temperature 99.8°. Patient was very sleepy.

It is noteworthy that such marked effects are produced by the endermatic use of guaiacol, when its internal administration and its injection into trachea and bronchi are not followed by similar effects.

Its use should be studied, and studied with caution that protects the patient from neglect in case of too sudden reduction of temperature.

The nurse in charge of the two cases noted, and Dr. McKirachan also, painted guaiacol on their own bodies to note its effect on normal temperature in the healthy subject. There was a slight chilly sensation half an hour afterward, but no sensible alteration of temperature on thermometric test. The guaiacol used in these two cases was not Merck's, but of American manufacture.

IMPERFORATE HYMEN, WITH RETENTION OF MENSTRUAL FLUID.

BY ADOLPH KAHN, PH.G., M.D.,
OF SAN FRANCISCO, CAL.

ON the evening of July 4th, at 10 o'clock, I received a summons to attend Miss R. A., who, the messenger informed me, was suffering great pain in the abdomen, and also that something was protruding from her parts.

The patient, a well-nourished and vigorous girl of nineteen years, I was informed, had, about four weeks previously, a similar, yet not quite as severe an attack as the present one, for which she consulted a physician. The affection was pronounced "bowel-complaint," and the girl was ordered the "rest-cure" for one week, as she termed it—remaining in a recumbent position, subsisting on a diet of milk, rice, and toasted bread, with a tablespoonful of castor-oil each night. In a few days she felt comparatively free from pain, but the uneasiness in the abdomen and bladder still persisted, with frequent stools and painful micturition. On the 2d of July the abdominal pains returned, increasing continually, and while at

stool she became aware of the protrusion from her body. It was then deemed advisable on the part of the relatives to call a physician.

Upon examination, I discovered an abdominal tumor extending upward to the umbilicus, giving the girl an appearance of being about six months pregnant, and causing me to inquire when she had last menstruated. In reply, I was informed that she had never menstruated, and that late menstruation was a family feature. I then proposed to ascertain the nature of the protrusion, and found the anus in a normal condition. I endeavored to make a vaginal examination, but that was impossible, for the hymen proved to be imperforate, the membrane being distended and protruding, the labia separated to an extent of two inches, and the perineum bulging as if pressed upon by a fetal head.

The parents were informed of the nature of the condition, and that an operation would be necessary. For the night, the pains were calmed by an anodyne suppository. On the following day, at my request, Dr. C. E. von Hoffman saw the case with me. The membrane was anesthetized with cocain, and a small incision was made in the median line, giving exit to a dirty-brown fluid, of which about two quarts escaped, when it became semi-gelatinous, necessitating the removal of a piece of membrane to permit it to flow more freely, but it gradually became so gelatinous that it had to be carefully pulled out with forceps. At least two more quarts were removed by this process.

The operation was performed upon strictly aseptic principles. There was no subsequent elevation of temperature. The patient was kept in bed for a week.

The points of interest in this case are: The condition of the menstrual fluid evacuated, the gelatinous substance showing that absorption must have taken place; the rapid recovery of the patient, showing the small danger attendant upon the rapid evacuation of accumulations under strict aseptic procedure; and the mistaken diagnosis in the first place; also, the extreme thickness of the membrane—one-eighth of an inch at least, when distended.

The patient has since had a normal menstrual period.

430 Kearny Street.

MEDICAL PROGRESS.

A Case of Focal Epilepsy.—White (*British Medical Journal*, No. 1700, p. 225) has reported the case of a woman, forty-one years old, who two and a quarter years previously had had the left breast removed for malignant disease, and who for some weeks presented numbness in the right hand. The day before coming under observation she had a convulsion, and subsequently about fifteen severe and a number of slighter fits every twenty-four hours. The attack was preceded by a sensation of numbness and tingling in the fingers and thumb of the right hand. In less than a minute afterward there followed a series of rapidly repeated extensions of the right wrist and metacarpo-phalangeal joints. At the same time there occurred a series of rapid abductions of the hand to the ulnar side. The next stage consisted of rapid flexions of the phalangeal and metacarpo-phalangeal joints, so that the fingers were dug into the palms of the hands. Then there followed a series of rapid flexions and extensions of the elbow; after which the attack was over. Exclusive of the stage of numbness the whole attack lasted about ninety seconds. The minor attacks were much shorter in duration and consisted only in a little movement of the fingers. In a few, after the flexions of the elbow, the shoulder was, for a few seconds, rapidly adducted and abducted, and the head was jerked to the left. It was said that the woman was unconcious after the first attack, but in those personally observed consciousness was not lost. In the intervals between attacks, the right upper extremity was, in all movements, weaker than the left. The hand lay pronated and the supinators were unable to move it. With the right hand the dynamometer could be moved only to 50, while on the left it could be moved to 90. There was no paresis of the muscles of the head, face, eyes, tongue, trunk, or lower extremities. The knee-jerks and plantar reflexes were preserved and more pronounced upon the right than upon the left. There was no clonus at either knee or ankle. The elbow-jerks were abolished. The wrist-jerks were present, that upon the right being exaggerated. The woman was intelligent. Sensibility to touch, pain, and temperature was quite normal over the whole body. The muscular sense was normal. The fields of vision were normal, both for form and for colors. The pupils were equal and reacted well, and there was no ocular paralysis. There was optic neuritis at an early stage upon the right; the left fundus was normal. Smell, taste, and hearing were all normal. A diagnosis was made of a growth in the left cerebral cortex implicating the arm-area and secondary to the disease of the breast. The patient was willing to submit to an operation, and, accordingly, the middle of the fissure of Rolando was exposed. Over an area that, as nearly as could be judged, corresponded with the part of the arm-area in the ascending parietal convolution the cortex at one part was of a rather more brownish-green tint than normal. This part was cut away to such a depth that white matter was exposed. When frozen and cut this was seen to consist of new-growth. At the operation it was not definitely marked off from healthy gray matter, which it closely resembled. After the operation there was paralysis of the whole of the right side of the face, except the orbicularis palbebrarum and the occipito-frontalis. The tongue occupied the floor of the mouth and was quite motionless. The upper and the lower extremities upon the right side were completely paralyzed, but no sensory defect was noticeable. Aphasia was complete. After a time the right pupil became larger than the left, and there was sweating of the right side of the face, while the left side remained dry. The pupils later again became equal, and the ability to protrude the tongue returned, while the facial paralysis diminished somewhat. There was gradual diminution in the paralysis of the right side of the body. Some power of speech also returned. For the first three days after the operation the temperature was from 1° to 2½° above normal. Then it was normal till a week before death, during which it was from 1° to 3½° above normal; but at whatever figure it stood it was almost always higher in the right axilla than in the left. The difference was usually about 1°; on one occasion it was as much as 3°. Sixteen

days after the operation careful examination showed that tactile and thermic sensibility and the power of localization were quite normal. About a month after the operation drowsiness appeared, with slowness of the pulse and cerebral vomiting, and in a short time death took place. On post-mortem examination it was found that the gap left by the removal of the diseased structure was limited in front by the fissure of Rolando, while posteriorly it extended slightly on to the supra-marginal convolution, its long axis just crossing the lower interparietal sulcus. The floor of the excavation was constituted of white matter, soft and discolored here and there, with shreddy filaments of growth. There were secondary deposits (all of which evidently had recently grown very rapidly) in the upper part of the ascending parietal convolution, in the posterior part of the third left frontal, in the upper part of the left angular, and in the middle of the right ascending frontal convolutions.

Symphysiotomy.—EUSTACHE (*Nouv. Archives d' Obstét. et de Gynécol.*, 1893, No. 7, p. 318) maintains that symphysiotomy may be considered as belonging within the domain of legitimate obstetric operations. It should not, however, replace the induction of artifical labor if the pelvic narrowing is detected in the course of the pregnancy. During labor it should be performed at once if the conjugate diameter is narrowed to between 3.1 and 2.3 inches. If this diameter exceeds 3.1 inches the operation should only be undertaken if it is not possible to terminate labor by means of version and the application of the forceps. In cases in which the conjugate is between 2.7 and 2.3 inches symphysiotomy ought to be performed in conjunction with the induction of artifical labor; and in most other cases with the application of the forceps.

The Resuscitation of the Newborn.—OEHLSCHLAEGER (*Centralblatt für Gynäkologie*, 1893, No. 31, p. 718) points out that in many cases of asphyxia, especially in the newborn, the ordinary measures of resuscitation fail, because the entrance to the larynx is closed by the epiglottis from the falling backward of the tongue. If, therefore, under these circumstances the tongue be pulled forward the epiglottis is raised and air can enter the lungs. Such a result sometimes takes place spontaneously; at other times additional measures will be necessary. In cases in which the heart's action is embarrassed, compression of the precordium will sometimes stimulate the faltering organ. The skin may be pinched or the walls of the chest compressed rhythmically in synchronism with the heart-beat.

THERAPEUTIC NOTES.

A Case of Traumatic Tetanus Cured by the Antitoxin.—GATTAI (*Centralblatt für Bakteriologie und Parasitenkunde*, Bd. xiv, Nos. 4, 5, p. 108) has reported the case of a girl, fifteen years old, who, while engaged in drawing, accidentally pricked herself upon the palmar aspect of the extremity of the right thumb with the point of a pair of compasses. The wound, which was attended with little loss of blood and occasioned little pain, was at once treated with a 10 per cent. solution of mercuric chlorid and dressed with gauze and cotton. In the course of the same day and during the night the wound became painful, while the adjacent joint became stiff and a small pustule formed, while a line of bluish redness appeared on the dorsum of the hand. The pustule opened spontaneously, permitting the escape of a few drops of pus. On the following day the margins of the pustule were removed and the parts disinfected by means of mercuric chlorid. The pain, however, persisted and occasioned a good deal of annoyance, in the course of the next two days assuming a paroxysmal character. It was recommended that the hand be placed in a warm solution of mercuric chlorid with every exacerbation of pain, but on the following day the pain extended up the arm. An abscess formed upon the dorsum of the thumb and was freely incised, throughly curetted, and disinfected. Applications of cocain hydrochlorate failed to relieve the pain. In the course of the following days stiffness appeared, first in the lower jaw, subsequently to become general. Dysphagia and photophobia also manifested themselves and convulsions recurred paroxysmally. A diagnosis of traumatic tetanus having been arrived at, an injection of two drams and a half of blood-serum from an immunified rabbit was given, and subsequently upon the same day, at an interval of six hours, two injections, each of seven and a half grains of antitoxin obtained from the blood-serum of a dog, were given. These injections were continued in approximately like dosage for a week, amelioration in the symptoms meanwhile progressively taking place. On one occasion a dram of chloral was given by enema, and on each of several occasions fifteen grains. Under this treatment improvement steadily progressed, until on the nineteenth day after the puncture the patient got out of bed and resumed her ordinary pursuits.

Bismuth in Large Doses for Chronic Gastric Catarrh.—PICK (*Berliner klinische Wochenschrift*, 1893, No. 31, p. 761) maintains that, in order to be effective in the treatment of chronic gastric catarrh, bismuth should be administered in maximum doses. His own mode of procedure, which he reports to have practised successfully in a large number of cases, is to give a small quantity of a saline in about eight ounces of warm water before breakfast and half an hour later from three to four drams of bismuth subnitrate in two equal parts in cachets. Massage of the epigastrium is then practised for a short time, and in half an hour the patient is permitted to breakfast. Ordinary care is to be exercised with regard to diet. In mild cases decided improvement is said to follow after a week of this treatment; in the graver cases three or four weeks elapse before a similar result is obtained.

The Utility of Electricity in the Treatment of Hemiplegia.—RENZI (*Revista clinica e terapeutica*, 1893, No. 1, p. 1; *Gaz. hebd. de Méd. et de Chir.*, 1893, No. 29, p. 345) contends that electrotherapy is sometimes immediately followed by a restoration of the power of voluntary contraction in the paralyzed muscles. This restoration is not dependent directly upon the electricity, but upon the contractions induced, the memory of the defective motor mechanism being thus revived.

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SATURDAY, SEPTEMBER 30, 1893.

THE LAY-PRESS AND MEDICAL ETHICS.

CONCERNING questions of taste, the oldest proverbial wisdom tells us that dispute is useless. In reference to the criticism of MR. ERNEST HART'S recent American addresses it is therefore amusing to notice with what unanimity and avidity the quacks, potential or actual, and their lovers, seize upon possible errors of fact the most trivial in order to make them excuses for rage against principles they hate, but which they hardly dare confess that they hate. Among a certain class of physicians, stung by MR. HART'S truths, it is delightful to see how gossip and scandal and condemnation of matters of taste are rolled as sweet morsels beneath the tongue, and this by men whose urbanity of deportment and exquisite sense of the fitting are quite as wofully illustrated as by a freshly imported South Sea Islander.

There are few medical men so bold as to defend the newspaper doctor, the self-advertiser, the fellow who furnishes the reporters with his own photographs and reports of operations, or who goes into the secret-nostrum business. An occasional man, with a degree of M.D., may possibly become such an *advocatus diaboli*, but it would be altogether too ludicrous to call him a *medical* man. But the concealed malevolence can expend itself in well-simulated horror at supposed lapses of good taste and thus run tilt against the red-rag of manners in order to lose in mad action the pain of the deft matador's burning darts. The service MR. HART has rendered us, however indirect, is excellent: he stimulates the secret enemies within the profession to show themselves and to range themselves where they belong—that is, with their friends the patent-medicine-fed, notoriety-seeking, nostrum-loving newspapers. There is a deal of ducking and dodging about it, of course, and we have some fine farcical touches now and then—medical Falstaffs, for example, attempting the rôle of auctioneers of their own virtue, and not getting a single bid.

But there are friends who are not compelled to whip up subterfuge or factitious indignation: these are the dear newspapers whose pocket-books are touched, whose very financial existence, indeed, depends upon crapulous advertisements and the money of the nostrum-vender. These may loudly bawl their hatred of anyone who shall pretend to criticise the infamous traffic upon which depends their daily bread—*Wessen Brod Ich ess', dessen Lied Ich sing'*,—and so from one land's end to another the venal newspapers whose ten columns are filled with filthy advertisements of nostrums, "patent" medicines, and obscene literature, find room in the one or two remaining editorial columns of their space (also for sale, if desired!) to abuse MR. HART because he thinks the newspaper doctor and the nostrum-traffic quite contemptible. With editorial ink that stinks of the advertiser's skunkery, the didactic editor writes against the plucky Englishman, his antediluvian ethics, and his ancient prejudices.

One example of many such is an editorial in a recent number of the *Pittsburg Post*, entitled "Antiquated Conceits," in which MR. HART and the "old school" are lectured as if by a demigod of wisdom and virtue for their "intolerance," "medievalism," "obsolete traditions," "despotisms," and all that, and are told that all this has long since passed away with other thousands of effete superstitions and shams. "Professional etiquet and ethics" are spit upon quite contemptuously, and the day of progress, of money-making by medical trickery, by nostrums, and, egad! by the newspaper, is dawning, to the everlasting shame of worn-out and antiquated medicine.

Now, if a healthy stomach can control a healthy

tendency to vomit when compelled to smell such an odious mess as this, it is of course quite amusing —much as would be a sermon by Boss TWEED on civic virtue. But repeated from a thousand newspapers it grows too intolerably wearisome, and indignation wishes that a DANTEAN circle of the Inferno might be awaiting these righteous and progressive editors who thus prostitute their office for gain, and that for two eternities they had to swim in lakes of their advertisers' bitters, blood-purifiers, and panaceas, with no food but their advertisers' "little pink pills," and "Gentlemen's Friend" ("with a syringe free"), and no literature but their advertisers' "marriage-guides," and "retired clergymen's" secrets.

There are, thank Heaven! a few lay-journals that from principle and very shame refuse to fatten on humbug, and to sell their editorial souls, to the begulled public's undoing. To these honorable exceptions we would appeal that they seek by every means, and on every possible occasion, to arouse in the public mind some true conception of the real state of affairs as regards the animus and doings of the medical profession, and as regards the animus and doings of the foes it has to withstand. It is extremely difficult to maintain a pure ethical ideal, and unselfishly to devote life for the benefit of those who not only are ungrateful, but who spew malice and abuse on their would-be benefactors.

In individual medical ethics and in their application in private life by the great body of the profession, there is a clearness of intellectual perception and a heroism of patient endurance unequalled by that of any body of men. But it is the united and corporate action that fails. And never in history did the public welfare more clearly depend upon anything than upon this purity of medical character and conduct, whilst at the same time foes within and foes without the profession are insanely seeking to destroy what is infinitely precious to that profession, but more precious still to a public that is stupidly regardless of its own highest interest, and of its own best friend.

At a certain physiologic season the female canine sends her volatile messages through miles of air, and the responsive friends never fail. The newspaper reporters also never miss the challenge of the newspaper doctor. But the newspaper doctor knows no estrual season—which is equivalent to saying that he is the professional prostitute. If it be said that owing to his sex the simile does not hold, the answer is prompt that there is a terrible revival nowadays of pederasty.

It is as natural for a newspaper to espouse the quack's side of medical scandal as it is for a gambler to defend horse-racing. If a rascal concocts some dodge for making a fortune by "curing" drunkards, for reviving the waning powers of roués, or for giving brain-power to the brainless, nine out of ten newspapers will give thousands of dollars' worth of free advertising to the schemes, and laud the "gold cures," "testicle juice," or what not else, to offended heaven. A Philadelphia newspaper lately made itself the agent of some patent medicine cure-all, and distributed thousands of bottles over its counters.

There remains, of course, the humiliating confession that the existence of the newspaper doctor and of the newspaper debauch in quackery is indirectly and in large part the fault of the profession itself, dependent upon the fact that we are a non-organized profession, and that what organization we have is not used in the practical righting of medical abuses. Thus, again and perpetually, recurs the truth that every medical scandal and every aspect of our powerlessness resolves itself into our sins of disorganization and of non-interest in practical matters and in preventive medicine. Out of a hundred thousand physicians in America hardly a hundredth part are active members of the American Medical Association, and the section meetings of "congresses" of physicians could almost always be held in an ordinary private sitting-room of a workman's cottage—so slim is the attendance. And when we do meet we discuss the symptoms and treatment of individual cases of illness, leaving out of consideration the production of disease, the prevention of it, and the domination of legislation, the newspapers, and the lay-world by the quack and the pill-vender.

How can we bring any influence to bear upon the newspapers if we present the spectacle of a disunited and factional lot of scramblers and indifferentists? There are many of these newspapers that are simply ignorant and thoughtless as regards the disgrace of their advertising columns, and who could easily be shamed out of it if we were but united among ourselves, and would use our united strength for matters of practical reforms of medical abuse and preventive medicine. Organize, and use organization for the world's sake! is the command of professional honor and of benevolence.

It may be said by the lay-journal that we as a

profession have no right to complain so long as so-called medical journals trade in nostrums, and so long as once reputable medical journals loan their columns to the defence of masked quackery, and to the abuse of critics of medical disgrace. The retort is pointless. This is a question like one of national finance, outside of parties, and all good men of whatever calling must unite to crush the control of the press by patent-medicine syndicates, and to aid the better part (which, despite appearances, is by far the greater part) of the medical profession to keep its character and standards above the smirch of a rotten commercialism. Reputable and self-respecting newspapers should combine to limit the national crime and disgrace of the newspaper debauch in advertisement filth and fraud.

SOCIETY PROCEEDINGS.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, held at Milwaukee, Wis., September 5 and 6, 1893.

FIRST DAY—SEPTEMBER 5TH.

Morning Session.

THE Association met in the club room of the Pfister House and was called to order by the President, Dr. George Henry Fox, of New York, at 9.30 A.M.

DR. R. B. MORISON, of Baltimore, Md., read a paper entitled "Cosmetics." Cosmetics, in a general way, may be divided into two classes, namely, those that are irritating and those that are soothing. For instance, if we wish to remove freckles or warts, a stronger application must be made than if we simply prescribe for a redness following an acne or an eczema. The patient, either through himself or his assistant, should be taught how to apply local remedies. Salves, plasters, lotions, and caustics are so often misapplied that experience had taught that an application from which one hoped to get the most good must be made by skilled hands. For the removal of freckles the following solution was recommended:

℞.—Corrosive sublimate	gr. vij.
Distilled water	℥vj.
Spirits camphor	℥ss.
Rose-water	℥v.

Three or four thicknesses of linen, cut to cover the seat of freckles, are moistened with the solution and placed upon the face at night until they dry, when they are taken off. Whatever remains on the skin is left there till morning and then washed off. After a few nights' application the face becomes red, and the epidermis begins to peel off in fine scales. Then an ointment is used night and morning, the application being made by gently rubbing it over the face for five minutes at a time with a clean finger.

In the removal of superfluous hairs, the author has given up electrolysis. He finds that the proper application of a good depilatory answers the purpose much better. There are many women who wish to get rid of the white lanugo down on their faces, upon whom it seems that electricity cannot be used for fear of stimulating the growth of the surrounding hair, and the appearance of permanent scars. If a preparation of yellow sulfate of arsenic and quicklime, of equal parts, made into a paste with hot water, be allowed to dry on the hairy skin, it removes the hair for ten to twenty days, and sometimes permanently. On the other hand, nothing seems to take the place of electrolysis when there are a few strong hairs growing from moles, in the removal of moles themselves, in angioma, or in permanent small red spots.

For the removal of warts the author prescribes the following:

℞.—Hydrarg. bichlor.	gr. v.
Acid. salicyl.	℥j.
Collodion	℥j.

He sometimes increases the mercuric chlorid to 30 grains in the same amount of collodion, if the milder application does not answer. It is applied every day once, the upper crust of the previous application being removed before a fresh one is made. Four such applications generally soften the wart to such a degree that gentle traction removes it painlessly, the further dressing being any simple ointment.

The author had obtained excellent results in cases of acne by the use of the galvanic current.

DR. GEORGE T. JACKSON, of New York, read a paper entitled "A Case of Rhinoscleroma," in which he said that in October, 1892, he had the pleasure of presenting to his class at the Woman's Medical College of New York Infirmary a case of rhinoscleroma. There have been only three cases of this disease reported by members of the American Dermatological Association since its foundation, in 1877. The patient, a woman fifty-four years of age, was born in Hungary. The disease began sixteen years ago as a slight thickening of the upper lip to the left of, and just under, the septum nasi. Since then it has grown slowly and without pain. During the past four years it has increased in size more rapidly than during the preceding twelve years. At present it appears as a hard, well-defined, elevated, old-ivory colored mass, located upon the upper lip, beginning at a point a little to the right of the middle line and occupying nearly the whole of the left side of the lip. It runs up upon the left side of the septum nasi to a slight extent. It is slightly lobulated, so that it has an uneven surface, and shows a number of dilated bloodvessels running over it, and a number of white points apparently representing plugged-up and dilated follicles. There is no history of syphilis, nor does it look like a syphilitic growth. There is no sign of ulceration and no tendency to break down. Only about 100 cases of the disease have been reported altogether.

No satisfactory treatment of the disease has been found. The best results so far reported have been attained by the use of salicylic acid, injected into the tumor daily, a 1 per cent. solution of the acid or a 2 per cent. solution of sodium salicylate being used, while ten grains of the acid were administered by the mouth three times daily.

"A Case of Circumscribed Scleroderma (Morphea)" was the title of a paper read by DR. W. T. CORLETT, of Cleveland, O. Mary M., ten years of age, an intelligent-looking girl, well nourished, although slightly pale, presented herself with variously sized and colored lesions on the left upper extremity. These were of two years' duration. The lesions were located on the extensor surfaces, the most typical lesion being situated on the middle third of the forearm. This was of oblong shape, four inches in length and two inches in width. It was slightly contracted, lessening somewhat the circumference of the forearm, and was somewhat depressed, resembling cicatricial tissue. The lesion presented a yellowish-brown central area, with a slightly uneven surface, slightly indurated, and non-adherent. There was no anesthesia. Hairs were absent. Outside the central zone was a bluish-white area surrounded by a lilac-pink border merging into normal skin. The veins about the lesion were very prominent. A second spot had appeared one year after the first on the back of the hand, the characteristics of which were similar to the preceding. During the four months prior to her first visit to Dr. Corlett seven other spots appeared on the arm and one on the shoulder. These were smaller than the original. Sharp pains were now complained of, extending from the shoulder to the hand. These were aggravated by writing, but lasted only a few days. Some itching around the margin of the lesions and, occasionally, frontal headache were complained of. There was tenderness over the upper dorsal and lower cervical vertebræ; but no motor or sensory impairment anywhere; nor was there any other evidence of cord-disease. There was no history which might possibly explain the lesions, excepting a fall upon the back at the age of five years. There was no history of nervous or hereditary disease of any kind in the family. The case was originally considered as a perfect type of morphea, but at the present time it presents a picture of the atrophic stage of scleroderma.

The points of interest are:

1. The changes of clinical form through which the disease has passed.

2. The predominance of the neurotic element, which is so often well-marked in morphea, and which points to the spinal cord as the most probable seat of the disturbance.

3. The confusion of nomenclature of morphea and its relation to scleroderma is of some interest. Modern treatises on dermatology by American authors are in the main inclined to consider morphea and scleroderma as distinct affections, while European authorities are rather inclined to the opposite view.

DR. W. A. HARDAWAY, of St. Louis, Missouri, read a paper entitled "A Case of Tuberculosis of the Skin Simulating Lupus Erythematosus." The patient was a pharmacist, twenty-eight years of age; whose previous health and family history were good, and who presented no history of tubercle. He is tall and spare, and of sallow complexion, yet a man of great endurance. In May, 1892, he noticed in his left malar region a small yellowish elevation the size of a pin-head. This was supposed to be a flesh-worm, and was squeezed, blood only being thereby obtained. The lesion gradually enlarged peripherally, becoming hard and red, but was unattended with subjective phenomena. He came under Dr. Hardaway's care in June, 1892, the lesion being now as large as a dime, and presenting an atrophic whitish center surrounded by a slightly raised infiltrated border of a dull-red color. The lesion was anesthetic, a characteristic which has been noticed in tubercular syphilides. The anesthesia was temporary. In a short time the patient passed from under observation and was gone for a month, during which time he was thoroughly treated for syphilis by another physician. The treatment simply aggravated the general and local conditions. On September 3, 1892, the original lesion was the size of a half-dollar, not raised from the surface, and moderately infiltrated. The center was still atrophic, and the same narrow dull-red line presented at the borders. In a few weeks several small acniform pustules appeared on the right temple, the side of the nose, and the inferior angle of the right eye. Others presented at the end of the nose, on the right ala, and left cheek. These lesions were not painful or itchy. Each lesion was surrounded by a red areola, which subsequently extended and became infiltrated, crusts forming over the centers of the lesions. The crusts were fatty or sebaceous in character, and with a dull-red surface beneath were suggestive of lupus erythematosus. As the borders of the lesions extended the centers cicatrized, presenting the same dirty-yellow appearance of the original patch. Early in January a small piece of skin was excised from the lesion on the right temple and examined microscopically. Electrolysis was tried upon the other lesions with an apparent cure, followed by a relapse after a few months, manifesting itself first by the formation of a scale in the center of the scar. Electrolysis was persisted in as fast as the spots appeared and with apparent success. In March a small patch similar to the others appeared upon the scalp, and this is now the size of a dime. The tendency to peripheral extension throughout has been a marked feature in this case. The whole nose finally became involved and became a continuous lesion of partly red and partly cicatrized integument, presenting a striking likeness to some forms of lupus erythematosus. At no time could nodules of lupus vulgaris be demonstrated, nor were the sebaceous plugs of lupus erythematosus seen at any time. The patient's general health has continued so poor that at one time general tuberculosis was considered imminent. A trip to Colorado brought about great improvement. At last accounts the disease was apparently quiescent, the patient's general health good, and no lesions of the lungs and larynx have been detected. Dr. C. Heitzmann reports, after microscopic examination of the excised piece of skin, that a moderate number of tubercle-bacilli were found. A large number of inflammatory corpuscles were also detected displacing the fibrous connective tissue. Nests of inflammatory corpuscles were seen in the arrangement characteristic of tuberculosis. The diagnosis was local tuberculosis of the skin, which was entirely in accord with the clinical diagnosis.

DR. H. R. CROCKER, of London, England, read a paper on "Lupus Erythematosus as an Imitator of Various Forms of Dermatitis." The author said that lupus erythematosus as an imitator of various forms of simple dermatitis was a formidable rival of syphilis itself. It was to this aspect of the disease that he desired to direct

attention by relating some cases and showing drawings which illustrated the points he wished to place before the Association.

The first drawing was an instance of a lupus imitating erythema tuberculatum. The patient was twenty-seven years of age. The lesions commenced on the right cheek. There was only one spot for the first two years; then others formed on the side of the nose, and they then became scattered irregularly over the face, but with the exception of a hempseed-sized nodule on the left ear, there was none anywhere else. The lobes of both ears appeared atrophied, but the patient said there had never been any lesions on them. All the lesions were exactly like those of erythema tuberculatum, varying from the size of a hempseed to a half-inch in diameter, quite smooth, except one on the side of the nose, which was scaly. They were of a uniform purplish-red, except one, which was whiter in the center.

Case 2 showed an advanced condition of the disease, which began in a similar form to Case 1.

Case 3 was one of lupus erythematosus like erythema papulatum. The patient, aged forty-two, was a cab-driver. Two years previously he had some rash on the cheeks which lasted only a month, and it was not until a year ago that the present eruption began on the sides of the cheek, and has gradually extended until it reached its present condition. The eruption when seen occupied the whole face below the eyebrows, the orbits themselves and the lower lip escaping, but the chin, except in the center, was affected. On the left side it extended above the brow, but below the orbits, and was remarkably symmetrical. The most recent lesions were on the lower part of the side of the face and below the jaw. In these positions they assumed the form of erythematous, slightly raised discs from a half to a quarter of an inch in diameter; the most recent were quite smooth and slightly convex; the larger ones were not prominent in the center and but slightly scaly.

Case 4 was like diffuse erythema, the patient being a lady, forty-three years of age. The disease had commenced three years previously as a small red spot on the side of the nose and had spread continuously. The whole nose was intensely reddened and slightly scaly; the skin thickened and infiltrated, but the orifices of the sebaceous glands were not plugged.

Another disease which lupus erythematosus imitates is psoriasis, and the author reported a case in point. A rarer imitation is that of lichen planus, of which the author has seen only two cases.

DR. CROCKER also reported a case of lupus erythematosus nodulatum. He had met with three or four other cases of this, but not with so many distinct foci of disease. In two cases there was only a single nodule in each. He also remembers a case in which there were even more foci of disease in a patient of the late Dr. Tilbury Fox. Cavafy also showed a case at the Dermatological Society of London, in 1892, but Dr. Crocker was not aware of any other cases having been recorded.

DR. E. B. BRONSON, of New York, followed with a paper entitled "The Treatment of Pruritus.". The author said that in the management of *pruritus essentialis*, as of any other disease, the first consideration should be directed to the cause. The adoption of measures tending to remove any accidental conditions or influences through which pruritus might be occasioned is important. Such causes include, besides various local sources of irritation, certain remote or general diseases and furnish the *indicatio causalis* in its more limited sense. This, however, states the scope of the problem only partially. What is of more importance is to establish principles of treatment fitted to those more special and more essential causes that constitute the necessary conditions of the disease and whence we derive the *indicatio morbi*. These causes are traced under etiology, and it is they which must afford the only intelligent basis for the therapeutics of pruritus.

The chief underlying condition in pruritus is hyperesthesia, whether in its common significance of an excessive irritability of the sensory nerves, or in the sense of an excess or engorgement of sensation. The prime indications then are to allay irritability and to divert or annul the excess of nervous excitement. Measures to remove local excitants include, first of all, such as directly tend to prevent scratching. To admonish the patient to refrain from this is usually of little avail. Restraint may be possible during waking hours, but at night, when the trouble is always at its worst, and especially during the state of somnolence midway between sleeping and waking, no power can prevent it. It can only be avoided by first mitigating the lesion through the aid of anti-pruritics. Sedatives used internally are likely to be disappointing. The degree of general sedation that is required to affect the nerves of the skin in so intense a disturbance as pruritis often is affords a sufficient reason why this method of treatment is usually objectionable. Further than this, the depressing and atonic after-effect on the nervous system tends to exaggerate the general hyperesthesia, which is already essentially an atonic condition, and thereby increases the tendency to itching. Especially objectionable are most of the narcotics. The bromids, on the other hand, are often indispensable and may be required in liberal doses. It is important to avoid the enervating effects of loss of sleep, and for this purpose sulfonal or some other hypnotic is occasionally needed. In connection with this, two internal remedies, which have been especially recommended by Bulkley, are worthy of mention, and they are cannabis indica and gelsemium. The former is known to be a cutaneous anesthetic as well as an analgesic, and by virtue of the former quality should be useful in pruritus.

Carbolic acid is the most reliable and most generally useful anti-pruritic which dermatologists possess. It was well named by Unna "the opium of the skin."

The following "anti-pruritic oil" has been much employed by the author for years both in local and so-called universal forms of the disease, with no more untoward results than now and then a trifling dermatitis, when through oversight the patient has been allowed to make the applications too frequently, or has continued them too long. The formula is:

℞.—Acidi carbolici . . . . . ℥j-ij.
Liquor. potass. . . . . ℥j.
Ol. lini . . . . . ℥j.—M.
Sig.—Shake before using.

To correct the disagreeable odor of the linseed oil a drop or two of the oil of bergamot may be added. Sali-

cylic acid and salol, though less energetic in their effects, act similarly to the carbolic acid. Thymol is also an admirable anti-pruritic, but on account of its irritating effect cannot be used when the skin is sensitive.

The author then dwelt on sensory stimulants, substitutive irritants, alteratives of cutaneous nutrition, and motor depressants. In pruritus hiemalis an all-important measure of treatment is protection against cold. The sole cause of winter pruritus, aside from a special predisposing hyperesthesia, is lowered temperature.

DR. JOSEPH ZEISLER, of Chicago, Ill., read a paper entitled "Angiokeratoma," and reported the following case: The patient was a German, and fifty-three years of age, butcher by occupation. Had never had any severe illness, but had had malaria once. His present illness began somewhat gradually about four years ago with red spots and verrucæ on the skin of different parts of the body. He was under medical treatment and says he improved for a time. He states that some of the red spots gradually disappeared at times, but returned, and new ones arose in different localitities. During all this period his general health had not suffered in the least. No anorexia, headaches, nor any other complaint existed. There is no pain or itching in the skin-lesions. Patches of vitiligo of large size are found on the front and sides of the abdomen and on the right side of the thorax, and some small patches in the right axilla, with faint patches on the right side of the chest posteriorly and on the neck. There are also large patches on the penis and scrotum and small ones on the inner surface of the thighs. There are some old marks of tinea favus on the scalp. Nevus-like spots and small tumors are scattered over the body. The patches vary in size from three or four inches in circumference to the size of a dime. They are red in color, vascular, and slightly raised above the level of the surrounding skin. On the right forearm are numerous small tumors, varying in size from minute spots to some the size of a hazel-nut. The larger ones are all pedunculated, firm, and vascular. There is considerable edema of the right hand and fingers. Microscopic examination was made by Dr. Zeisler. Some of these tumors sprang out from beneath the finger-nails. On the left hand the verrucæ were not so numerous and inclined more to the small vascular variety, with two exceptions. Large irregular red patches were also found over each patella, and a few smaller ones irregularly scattered over the anterior aspect of the legs and thighs; also a few smaller ones over the posterior aspect of the thighs and one on each ankle. Two small pedunculated warts were also found on the back of the right leg, another with some of the red patches on the nates near the gluteal fold. No patches or tumors were found on abdomen, thorax, or upper part of arms.

The author reported this unusual and interesting case to show that the clinical picture of the disease is evidently not yet quite complete, and hoped that new examples of the disease would arise which would throw more light on the pathology and etiology of the affection.

DR. J. A. FORDYCE, of New York, read a paper entitled "A Contribution to the Pathology of Acne Varioliformis (Hebra)." Dr. Fordyce called attention to the case described by Dr. Bronson and himself in 1891, under the title of "Acne Varioliformis of the Extremities," which was at that time shown to originate in or about the coil glands. This was identical with cases since reported by Politzer, Dubreuill, and others under the name of Hydradenitis, and should go on record as an example of that affection. While clinically it presented many points of similarity to acne varioliformis (Hebra), its pathologic anatomy was quite distinct.

The writer had examined microscopically a number of papules and papulo-pustules from two typical cases of the latter disease, and was able to trace its beginning to an inflammation about the middle and upper portions of the hair-follicles and their sebaceous glands, while the coil glands were shown to be outside the inflammatory area. Enormous numbers of staphylococci were found in sections from one of the cases examined which readily stained with Kühne's carbolic methylene-blue solution. These organisms were especially numerous about the middle and deeper portions of the hair-follicles, and were contained within the external and internal root-sheath, in the connective tissue about the coil glands, and in the subcutaneous connective tissue. In considering their number, distribution, and presence in the diseased area before the epidermis was involved, the writer was disposed to consider them a direct influence in producing the lesions. In a secondary infection they would scarcely be found at so early a period in the evolution of the papule.

As a result of his investigations, Dr. Fordyce concluded that acne varioliformis (Hebra) was an inflammation of the pilo-sebaceous system, of microbic origin, leading to destruction of these organs, and that Bazin was correct in naming the disease acne pilaris.

The members of the Association, at the close of Dr. Fordyce's paper, participated in a general discussion on pityriasis, rosea, and pemphigus.

The following officers were elected:

President—Dr. Robert B. Morison, of Baltimore, Md.

Vice-President—Dr. George T. Jackson, of New York.

Secretary and Treasurer—DR. Charles W. Allen, of New York.

Member-at-large of the Council—Dr. J. A. Fordyce, of New York.

On motion, the Association adjourned to meet in Washington, D. C., in connection with the Congress of American Physicians and Surgeons, in May, 1894.

FIRST PAN-AMERICAN MEDICAL CONGRESS,

Held at Washington, D. C., September 5, 6, 7, 8, 1893.

(Continued from page 364.)

SECTION ON GENERAL MEDICINE.

THIRD DAY—SEPTEMBER 7TH.

DR. H. A. WEST, of Texas, read a paper entitled "Abstract Clinical Notes on Amebic Dysentery," in which he spoke of the practical importance of the subject in consequence of the diversity of opinion in regard to the definition, varieties, and etiology of dysentery, and especially the non-recognition by the general medical profession of the causal relations of the ameba coli in the production of dysentery and the wide dissemination and frequent occurrence of this form of the disease.

Attention was called to the following points:

1. Importance of a correct definition. Dysentery is not, as is usually taught, a morbid entity, consisting of an inflammation of the large intestine, essentially the same in all forms and climates, varying only according to climatic and other modifying conditions; on the contrary, the term dysentery should be used in a general sense to designate a group of inflammations of the large intestine partly of specific and partly of non-specific origin.

2. The adoption of the following classification will do much toward dissipating the existing confusion, viz., acute catarrhal, acute diphtheric, amebic, and secondary dysentery.

3. Amebic dysentery is more widely disseminated and occurs with greater frequency than is generally supposed.

4. To emphasize the probable entrance of the ameba through impure drinking-water.

5. To note the characteristic and uniform symptoms of this form of dysentery.

6. The essential chronicity and difficult cure depending upon the character and location of the lesions.

7. The necessity of combating the excessive anemia and wasting by the use of a more liberal diet than is generally prescribed.

8. To urge the importance of cleansing and antiseptic irrigations as a rational method of reaching and destroying the ameba, and stimulating the intestinal ulcers to heal.

9. To note the fact that while solutions of quinin are destructive to the ameba, injections of the same fail to exercise any marked curative effect.

10. The author's experience going to show that mild injections of nitrate of silver, thirty grains to a quart, with occasional administration of salines and large doses of bismuth and salol constitute the best treatment.

The nature of the disease is such as to produce very rapid anemia and wasting. It is necessary to combat these results by the plentiful use of nitrogenous food—meat, fowl, eggs, rich broths, milk, etc.; if restricted to a milk-diet these patients will very rapidly fail.

The character of the lesions gives the key to the most successful treatment, viz., consisting of thorough irrigation of the intestine, first with simple warm water for cleansing purposes; second, with an antiseptic solution for destroying the organisms and stimulating the ulcers to heal. For the latter purpose Dr. West has tried solutions of quinin, creolin, and silver nitrate; the latter has given the best results; quinin, in his experience, failing to accomplish any permanent good. While not attempting to explain the mode of action, large doses of bismuth subnitrate and salol seem to have had a distinct effect in controlling the excessive frequency of the stools. Salines also at times are beneficial, their mode of action probably consisting simply in a cleansing effect, in sweeping out irritants of various kinds.

DR. CARMONA, DR. GARDINER of Indiana, and others participated in the discussion, which was generally confirmatory of Dr. West's conclusions.

DR. J. W. MCLAUGHLIN, of Austin, Texas, read a paper on "The Bacteriology of Dengue Fever," illustrated by photomicrographs of jelly-cultures of the dengue-micrococcus. In closing the discussion on his paper Dr. McLaughlin said:

There is a very strong distinction between dengue fever and influenza, although there is a strong similarity. The cold weather kills dengue fever, which is without the catarrhal symptoms of influenza. While there is a resemblance, there is a marked distinction in the cause and in the disease itself. Dengue fever is to be regarded as distinctly different from influenza.

DR. F. G. NOVY, of Ann Arbor, Michigan, read a paper on "The Culture of Anaërobic Bacteria," containing a brief *résumé* of the principles and methods employed in the culture of anaërobic bacteria.

DR. NOVY also read a study of "A New Anaërobic Bacillus of Malignant Edema." In several guinea-pigs which died after injection of an impure milk nuclein solution a marked edematous condition was observed resembling, and even more pronounced than, that of malignant edema. In the subcutaneous tissues, peritoneal exudate, heart-blood, spleen, liver, etc., were found enormous numbers of a long slender bacillus. This organism was found to be obligative anaërobic in character, and pure cultures possessed marked infectious and extremely toxic properties, producing death in from twelve to thirty-six or forty-eight hours, with a characteristic edematous condition.

This new, highly pathogenic, anaërobic bacillus is motile and the flagella can be readily demonstrated by Löffler's method.

The germ is readily stained by simple dyes and also by Gram's method. Spore-formation has not been observed, but the germ itself is extremely resistant.

CORRESPONDENCE.

DR. HAMMOND AND THE MEDICAL PROFESSION.[1]

To the Editor of the *New York Medical Journal*,

SIR: My respect for and my sympathy with the medical profession in America, and my knowledge of its sentiments, forbid me to regard Dr. William A. Hammond as its representative in the defence which he puts forward in your columns of September 16th, of the practices of publicity-hunting by newspaper interviews, newspaper portraits, and of the use of and traffic in secret preparations, etc. I have in the course of recent travel received personally from many hundreds of prominent and representative physicians in Milwaukee, Washington, Boston, Philadelphia, Chicago, Cincinnati, Detroit, and from all parts of the United States, their cordial congratulations on the tone and substance of the addresses which I had the honor to deliver at Milwaukee and Washington. I have been assured on all hands of the entire sympathy of the great body of the profession in the views therein laid down and discussed. I should have been surprised, however, and perhaps disappointed, if they had not elicited some expression of pain and anger from certain quarters. "Let the galled jade wince, the withers" of the great American medical profession are,

[1] From an advance duplicate of a letter sent to the *New York Medical Journal*, kindly furnished THE MEDICAL NEWS by Mr. Hart.

I am assured, "unwrung." Your correspondent, in an access of ethical agnosticism, assumes that the enumeration of ethical data as to medical conduct was or could be a reproval, direct or implied, to the medical profession of America. That is an unmerited insult which he addresses to his profession, and indicates a view which I apprehend to be special to himself. Let him enjoy the practices which he defends; I do not think that he is likely to find much support or sympathy in them from medical men in good standing. His account of the position of medical men in Great Britain is a parody undeserving of serious notice. So as to myself, whom he favors with some personal abuse, I have been avowedly the scientific adviser to, but it is untrue that I have ever held any of the stock of, the Apollinaris Water Company. As to his other trivialities, I was the guest of the Pan-American Medical Congress, and on entering its headquarters I registered in ceremonious form.

I have no desire to be honored amongst "the Pan-Anglicans," "the loyal legion," "the fat men of America," and the other objects of lay interest with whom Dr. Hammond puts medical men on a par, and I do not agree with him that medical men should desire to share with them the honor of newspaper notoriety. I do not believe any details of my medical career have ever appeared in any lay paper. I suggest that it might be desirable for Dr. Hammond to rely less upon his imagination for his facts, and not to assume to speak for a profession from which he has no sort of mandate, and which would, I am well assured, repudiate, if consulted, both his advocacy and his methods of action and of expression. I am assured that he utterly misrepresents that profession, both in his statement of principles which he ascribes to it, and in his abuse of myself.

I am, sir, yours faithfully, ERNEST HART.

CLINICAL NOTES ON RHUS TOXICODENDRON.

To the Editor of THE MEDICAL NEWS,

SIR: In an editorial comment in THE MEDICAL NEWS of September 9, 1893, attention is called to the use of rhus toxicodendron "in a large and ill-defined group of chronic rheumatic affections," and allusion is made to its usefulness in certain chronic skin-eruptions, in hemorrhoids, varicose veins, etc.

To Dufresnoy, of France, belongs the credit of first having observed the therapeutic effects of the drug. He quotes a case of a young man so severely poisoned by contact with the plant as to experience its constitutional effects, the result of which was the cure of an eczema of many years' standing.

From the time of this observation comparatively little account has been taken of its action by the regular profession, especially in this country. It is official in the German Pharmacopeia, and was recognized by the United States Pharmacopeia of 1830.

The "Eclectic" and "Homeopathic" schools seem to have retained it, and we find it and its ally, "rhus aromatica," entering into the composition of various proprietary eliminative mixtures.

A strange relationship seems to exist among its uses by the older men of the regular school, the eclectic, and the homeopathic professions. Among its "indications" in the therapeutics of the latter we find "*Rheumatic and gouty* tension, joint and tendinous lameness, urticaria, heat spots, vesicular and scaly eruptions, nocturnal incontinence, etc."

Dr. H. G. Piffard, in speaking of its use in skin-affections, says: "I have seen prompt change for the better, I might almost say abortion of the eruption, follow the uses of small doses of rhus toxicodendron."

Dr. Aulde, of Philadelphia, also speaks of the value of small doses.

My personal experience with the drug dates back two years, and although I have used much larger doses (five to ten drops of the fluid extract) than those recommended, I have seen no evil effects, and can confirm its usefulness in certain painful conditions.

My attention was called to its use by a man who had tried in vain the various "pathies," and who had spent much time and money at Hot Springs, Arkansas, in a fruitless endeavor to rid himself of what had been diagnosticated as chronic rheumatism, and who, at last, to use his own language, had "found something that had made a new man of him, and would knock the rheumatism out of any man." This "something" was the fluid extract of rhus toxicodendron in ten-drop doses. I determined to give it a trial. My first case was that of a lady, of distinctly uric-acid inheritance and diathesis, who had gone the rounds of the iodids, alkalies, and salicylates with but little effect, and who now keeps a bottle of rhus toxicodendron as a panacea, claiming that she can always control her pain by it, and that she does not think that she would have been able to be about the past winter had it not been for the relief afforded by the drug.

My second trial was in the case of a man suffering with cramps in the calves, some lumbar pain on motion, and numb spots along the terminals of some of the sciatic-nerve branches. Iodid with colchicum afforded little relief; tincture of rhus (five drops to the dose) was added, and relief was speedy.

My third case was in a man, over fifty years of age, who had suffered with rheumatism at intervals for years, and whose urine, at the time of employing the drug, showed a specific gravity of 1025, with excess of urates. He presented himself for the treatment of an eczema of the scalp and backs of the hands. The promptness with which the case responded to treatment (rhus toxicodendron being given internally) led me to attribute the results largely to that drug.

In a number of other cases I have *thought* that I derived benefit from its use, and I continue to use it as an ingredient of my prescriptions for rheumatism.

In one case of irritable bladder I have tried the drug with negative results, but in this case the specific gravity of urine was but 1010; and although no tube-casts were found in the specimens, the other symptoms all pointed to the case being one of primary chronic nephritis.

In glancing over the various conditions for which the drug has been particularly recommended, we get some order out of the chaos. The stiffness, the cramps, the rheumatic pains, the incontinence of urine, the scaly and itching skin-diseases, and even the hemorrhoids and varicose veins, are so often the results and the accompaniers of the uric-acid diathesis that it is probably in the cases depending upon such a cause that the drug proves useful.

One other very significant fact occurs as a suggestion, and that is the well-known efficacy of the allied species "rhus glabrum" in the local treatment of pharyngitis of rheumatic origin.

Respectfully yours,

FRANK W. THOMAS, M.D.

GERMANTOWN, PA.

THE TREATMENT OF CHOLERA MORBUS.

To the Editor of THE MEDICAL NEWS,

SIR: As in a great many parts of the country cholera morbus for the past few months has proved itself to be a disease of a most decidedly fatal character, I beg to suggest for the consideration of medical readers a treatment that, according to my observation, has universally been successful. I also wish to suggest that opiates, as they are generally used in this class of diseases, are, to a great extent, contra-indicated, and are frequently the indirect cause of fatal results. Only a few days ago I learned of a case, that of a young woman suffering with cholera morbus, which well demonstrated this fact. The pains and muscular contractions were very severe. Morphin was given and the doses repeated until relief was obtained. During the following day, as there was no pain, no more of the drug was administered, but the patient seemed to be sinking into a low septicemic state. During the second day she died, having rapidly developed symptoms of a ptomaïnemia. In this case there seemed to be no elimination, but consequent rapid formation and absorption of septic materials. Morphin was thought to be the cause of the stoppage of the channels of elimination, Such evidently is frequently the case in this class of diseases; ptomaïnes and like poisons are rapidly formed and absorbed, and in large quantities, as is evidenced by the conditions found: the extreme irritation of the alimentary canal, the rapidly destructive processes, the great amount of nerve-excitation, and the final collapse. Opiates should therefore be given with great caution, in as small dose as possible, and discontinued as soon as possible, because their tendency to arrest elimination from the body, especially through the kidney, is very decided. Many of us have heard physicians remark in speaking of a case of cholera morbus: "The pains and muscular contractions were so severe that I had to give several injections, each containing a large dose of morphin, before I could get any effect of the drug." If that physician had remained with his patient he would probably have found that after the pain (the antidote for opium) had ceased, his patient was in a condition of profound opium-poisoning, with tightly contracted pupils, scanty urine, a dry mouth, and slowed respiration. Such a condition in itself would require several days for the patient to recover from.

The treatment I wish to suggest for consideration and more general use is as follows: In the acute stage of the disease, given an ordinary dose of morphin hypodermatically; if, after a short while, this does not have the desired effect, administer chloroform to partial or complete anesthesia; keep the patient in a restful state for a short time, and then with perfect quiet allow him to recover from the effects of the chloroform. The morphin will, by this time, have had sufficient time to take effect, and in combination with the condition of exhaustion, will produce a state of ease or most frequently a peaceful sleep. Reaction will rapidly commence, profuse sweating, a changed condition of the entire system, and with a simple mixture of bismuth, mint, etc., the patient goes on to complete recovery. On the day following the attack, the lower bowel should be washed out by means of an enema consisting of a pint or a quart of warm water containing ammonium chlorid ʒj to the pint. The tincture of the chlorid of iron in 10 or 15 drop doses should be given three times daily following these attacks, as it seems to act in a most beneficial manner and frequently prevents relapse and inflammatory changes from taking place in the intestines. There seems to be no danger connected with the administration of chloroform in these cases, and the almost instantaneous relief given by it frequently shortens the disease and avoids a fatal termination, and, as by its use the spasmodic pains and muscular contractions are interrupted and the vomiting and purging checked, only a small amount of the opiate becomes necessary and the injurious effects of the drug are avoided.

Respectfully,

W. MAZYK MEMMINGER, M.D.

CHESTER, PA.

MORE ABOUT STENSEN.

To the Editor of THE MEDICAL NEWS,

SIR: The variations in the spelling of this anatomist's name are due to the fact that he lived in various countries and wrote or corresponded in various languages. *Stensen* is the original form, as he was born in Denmark. In Italy he was called *Stenone*. The French form is *Sténon;* the Latin form is *Stenonius*, or *Steno;* his German contemporaries used both the Latin forms.

The form *Stenonis* often occurs, and almost always in the genitive case, as, for example, on his tombstone in the church of St. Lawrence, in Florence: "*Nicolai Stenonis . . . quidquid mortale fuit . . . hic situm est.*" Hence it is clear that *Steno* is a correct form, being the nominative, third declension, like *Cicero, Ciceronis*. If Stensen ever signed himself *Nicolaus Stenonis*, it must have been according to Danish usage, the word *filius* being understood, as if he would say: *Nicolas, son of Steno*. In English we should use the original Danish *Stensen*, or else the Latin *Steno* or *Stenonius*.

It may be worth while to add that Stensen was a remarkable man, and led a very eventful life. He ranks high not only as an anatomist, but also as a geologist and as a theologian. Born in 1638, he became a Catholic in 1667 during a visit to Italy. In 1672 he was Professor of Anatomy in the University of Copenhagen. Two years later he resigned that post, returned to Italy, and, in 1675, became a priest. In 1677 he was made bishop, and placed in charge of Catholic interests in Northern Germany. There he labored till his death, in 1686. His life was that of a saint, his zeal untiring, his charity limited only by his means, his self-mortification and fasting excessive—in fact, he seems as worthy of canonization as any saint in the calendar.

As a matter of truth, the doctors *do* need a patron saint.

Very respectfully,

R. J. DOHERTY, M.D.

CHICAGO, ILL.

NEWS ITEMS.

Dr. Vignard has been elected professor of anatomy at the University of Nancy.

Dr. Tappeiner has been elected professor of pharmacology at the University of Munich.

Bayer has been made professor extraordinary of gynecology at the University of Strassburg.

Fr. Kraus has been made professor extraordinary of internal medicine at Vienna.

Paul Ernst has been made professor extraordinary of pathologic anatomy at Heidelberg.

Richard Neumeister has been made professor extraordinary of physiologic chemistry at Jena.

Podwyssotzki has been made ordinary professor of general pathology in the University of Keiff.

Oscar Loew, of Munich, has been called to Tokio to assume the professorship of botany in the University.

V. Noorden, assistant at the second medical clinic at the Charité at Berlin, has received the title of professor.

Mitropolski has been made professor extraordinary of special pathology and therapeutics in the University of Moscow.

Herman Oppenheim, formerly assistant in the department for nervous diseases at the Charité at Berlin, has received the title of professor.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee, will hold its fifth annual meeting at Chattanooga, October 17th, 18th, and 19th. An interesting program is in process of preparation.

The Southern Surgical and Gynecological Association will hold its annual meeting at New Orleans, on November 14th, 15th, and 16th. Members of the medical profession are cordially invited to attend. A successful meeting is anticipated.

Professor J. Sommerbrodt, well known for his work upon sphygmography and for the construction of a syphgmograph with regulable pressure, and for his work upon the treatment of tuberculosis with creosote, died on August 14th, at Breslau.

A New Medical School for Boston.—The trustees of Tufts College have decided to establish a medical department, to be located in Boston and to be opened during the current session to both men and women. Dr. Albert Nott is the dean and Dr. Charles P. Thayer the secretary.

The New York Medical Association will hold its Tenth Annual Meeting on October 9th, 10th, 11th, and 12th, 1893, at Mott Memorial Hall, in New York City. The program includes the following addresses, papers, and discussions:

Address of welcome by the Chairman of the Committee of Arrangements, Dr. John G. Truax; address by the President, Dr. S. B. Wylie McLeod; address, "The Medical Work of the Association during its First Decade," by Dr. John Shrady; address: "The Surgical Work of the Association during its First Decade," by Dr. Stephen Smith; "Report of Eight Cases of Placenta Praevia," by Dr. Zera J. Lusk; "Penetrating Wound of Anterior Fossa Through Orbital Plate of Frontal Bone—Recovery," by Dr. Zera J. Lusk; "The Treatment of Epithelioma and the Cancroid Ulcers by Topical Application," by Dr. Nelson J. North; "Prevention of Disease," by Dr. James G. Porteous.

"Lesions of the Pleura," to be discussed by Drs. John Shrady, Frank W. Ross, William McCollom, Edward F. Brush, J. Blake White, John G. Truax, M. K. Hogan, and Charles A. Leale; "The Surgical Treatment of Pulmonary Cavities," by Dr. N. P. Dandridge, of Cincinnati; "Remarks on Fermentative Dyspepsia," by Dr. Austin Flint; "Open Treatment of Tuberculous Diseases of the Joints," by Dr. T. M. L. Chrystie; "Bloodless Amputation at the Hip-joint," report of cases operated on by the author's method, by Dr. John A. Wyeth; "Report of a Case of Osteotomy of Both Femora for the Relief of Deformity following Ankylosis of the Hip-joints," by Dr. Reginald H. Sayre.

Address: "The Obstetric and Gynecologic Work of the Association during its First Decade," by Dr. George Tucker Harrison; "Rare Forms of Gout and Rheumatism," by Sir James A. Grant, of Ottawa, Canada; "Treatment Often Indicated after Trachelorrhaphy," by Dr. William H. Robb; "℞," by Dr. Henry D. Didama; "Ten Years' Experience in the Treatment of Cataract," by Dr. Alvin A. Hubbell; "The Treatment of Enteric Fever," by Dr. Gustavus Eliot, of New Haven, Conn.; "Voluntary Commitment of the Insane to Asylums," by Dr. W. D. Granger; "Surgical and Pathologic Memoranda," by Dr. Donald McLean, of Detroit, Mich.

"The Treatment of Appendicitis," to be discussed by Drs. Frederic S. Dennis, R. N. Cooley, Donald McLean, W. S. Tremaine, Joseph D. Bryant, and John W. S. Gouley.

"The Male Catheter, with Some Observations upon the Proper Mode of Introduction into the Bladder," by Dr. Douglas Ayres; "Researches on the Efficacy of Vaccinia after Typhoid Fever," by Dr. William Finder, Jr.; "Reflections on the Need of Close Observation of Disease and on the Value of Hygienic Therapeutics," by Dr. H. Ernst Schmid; "Unique Case of Traumatic Tetanus, with Generalization—Recovery," by Dr. John G. Orton; "A Case of Puerperal Blindness," by Darwin Colvin; "A Plea for the Non-operative Method of Treating Dysmenorrhea, Pelvic Inflammation, and Pelvic Abscess," by Dr. T. J. McGillicuddy; "An Additional Note on Nephrotomy and Nephrectomy," by Dr. E. D. Ferguson; "Fifty Operations for Laceration of the Cervix Uteri," by Dr. J. B. Harvie; "Brief Comments on the Materia Medica, Pharmacy, and Therapeutics of the Year ending October 1, 1893," by Dr. E. H. Squibb.

BOOKS AND PAMPHLETS RECEIVED.

Pachymeningitis-myxedema. By Samuel Wolfe, M.D. Reprinted from the American Therapist, 1893.

Inguinal Hernia in the Male. By Henry O. Marcy, A.M., M.D., LL.D. Pamphlet, 1892.

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ORIGINAL ARTICLES.

THE PRINCIPLES OF IMMUNITY AND CURE IN THE INFECTIOUS DISEASES.[1]

BY VICTOR C. VAUGHAN, M.D.,

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GENTLEMEN OF THE SECTION ON GENERAL MEDICINE OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS: I wish to extend to you a hearty greeting, and to thank you for your presence and for the interesting and valuable papers which many of you have prepared and which will make the work of this Section worthy of the profession of the New World.

In opening the labors of this Section, I have decided to bring before you for your consideration a theory concerning the principles of immunity and cure in the infectious diseases. I shall at first discuss the question of immunity and shall then endeavor to ascertain the differences, if there be any, between the fundamental principles upon which immunity is secured and those by which cure may be brought about.

Upon the subject of immunity many valuable contributions have been made, and theory after theory has been proposed. Both the researches and the theories have their value, that of the former being permanent and that of the latter consisting principally in suggestions that stimulate and systematize investigation. The value of a theory does not wholly depend upon its truth, but is rather to be measured by the fruitfulness of the lines of investigation that it opens. Indeed, a theory may be wholly erroneous and yet it may lead to most important discoveries.

It is not my purpose to assail or even to discuss the theories concerning immunity that have heretofore been brought forward, but to suggest one that, in my opinion, will harmonize the results already attained by scientific workers and which, I hope, will lead to other investigations.

Immunity may be natural or acquired. Natural immunity may be peculiar to the species or race, or to the individual. An example of natural immunity is that of the domestic fowl to anthrax. As has been shown by Lazarus and Weyl, the chick, even at the time of coming from the shell, is immune to the most virulent culture of the bacillus anthracis. It is true that this animal may be made susceptible to anthrax, but this is an artificially-induced susceptibility. The immunity is natural to this bird at every period of its life. Another example of racial immunity is that of the frog to anthrax. This animal can also be rendered susceptible, but again it is true that the susceptibility is artificial and the immunity is natural. Racial immunity must be inherent in the parent cell.

The natural immunity, which is peculiar to the individual, usually comes with adult life. The young are susceptible to a given disease, but adults of the same species lose this susceptibility and become immune. The young rat is susceptible to anthrax, while the adult is naturally immune, but can be rendered susceptible by exhaustive exercise. The child is highly susceptible to scarlet-fever and diphtheria; while the adult, though not wholly immune to these diseases, loses very much in susceptibility and is likely to become infected only when greatly reduced in vitality or after prolonged and aggravated exposure to the poison. The only reasonable explanation of this immunity is that it is inherent in the parent cell and comes on as naturally as do the changes in form and voice at puberty or the growth of the beard in early manhood. The evolution of the condition of immunity in these cases is due to the natural development of the functional activity of certain cells of the body. The cause of the difference in the effect of the anthrax-bacillus on the young rat and that of the same germ on the adult rat exists in the rat and not in the bacillus. A child and an adult are exposed to the Löffler bacillus from the same source; the former becomes infected, the latter does not. The germ is the same, but in the development that converts the child into the adult, the resistance with which the germ must contend has been strengthened. The immunity that comes with adult life must be due to altered cell-activity.

Ehrlich has shown that immunity from poisoning with the vegetable proteids, abrin, ricin, and robin, is transmitted from the mother to the fetus and retained by the latter for more than a month after birth, when it is quickly lost, and that the second generation fails to show any immunity. He concludes that there are two kinds of immunity: one he designates as active, the other as passive. The

[1] The President's Address, read before the Section on General Medicine of the Pan-American Medical Congress, held at Washington, D. C., September 5, 6, 7, 8, 1893.

immunity that he found to be transmitted, as already stated, from mother to child he classifies as passive, and thinks that it is due to the transmission of ready-formed antitoxins from the mother to the child and that these antitoxins being soon eliminated the immunity is lost. In active immunity he supposes that the body has acquired the property of manufacturing the antitoxins, but upon this point he is not clear. He also demonstrates that immunity may be transmitted from the nurse to the child, even when the latter is not the offspring of the former and has come from a highly susceptible mother.

This division of immunity into an active and a passive form is convenient and plausible, but Ehrlich's active immunity must be cellular in origin. Can any chemical products be elaborated in the animal body except by the activity, either direct or indirect, of cells? The most earnest opponent of vital energy—which now means cellular activity—admits that the active principles of the digestive juices are the products of specialized glands, and even the absorption of the products of digestion, which we once believed to be effected in accordance with the comparatively simple laws of osmosis, is now known to be dependent upon cellular activity. But can it be said that the temporary immunity that is transmitted from mother to child or from nurse to nursling is of cellular origin? The mother and the fetus are physiologically one, and the same is true of the nurse and the nursling. The blood of the mother flows through the fetus, and the products of the cells of the nurse feed the nursling.

Ehrlich made six experiments, in which it was found that the offspring of an immune father and a susceptible mother did not possess even a temporary immunity, and this forms another reason for his belief that immunity is humoral; but Tizzoni and Cattani have shown that an immunity to tetanus artificially induced in the sire is transmitted, though lessened in degree, to his offspring, although the mother remains susceptible; and Tizzoni and Centanni, that a like immunity to rabies may be transmitted from father to offspring. If these statements be true, the humoral theory of immunity must be modified so that the non-cellular elements can be considered as inducing immunity only by their effects upon the cellular elements. As is claimed by Ehrlich, immunity transmitted from the mother to the offspring may be explained by supposing the introduction into the latter from the former, through the fetal circulation or through the milk, of immunity-conferring substances in soluble form; but in the transmission from father to children, we can conceive only of the idea that the immunity must reside in the cellular elements of the spermatic fluid, because our knowledge of fecundation teaches us that the head of the spermatozoön fuses with the ovum and produces the child.

Artificial immunity may be induced by either of the following methods:

1. By an attack of the disease, ending in recovery. Until the discovery of Jenner, this was the only known cause of immunity, and even at present it is supposed to be, as far as man is concerned, the most potent cause. However, we now know that the period of time through which immunity thus obtained holds good has been overestimated. A man may have smallpox the second time, provided several years have elapsed since the first attack, and provided the second exposure brings him in contact with a highly virulent form of the infection, or the exposure continues through an unusually long period or happens at a time when the health is much reduced from any cause. Moreover, the period of immunity conferred by an attack of some of the infectious diseases is so short that many have reasonably questioned its existence.

It is true, I believe, that the more grave and virulent the disease may be, the greater and more persistent is the immunity that follows. I mention this in order to call attention to the fact that there is a quantitative relation between cause and effect in the production of immunity. Please bear in mind that in this method of inducing immunity the substance of the germ itself is introduced into the body. This method found a practical application in inoculation for the prevention of smallpox.

2. By vaccination with a modified and less virulent form of the infection, or by the introduction of at first a very small number of the virulent germs and successive inoculations with larger numbers.

The successful inoculations against chicken-cholera and anthrax made by Pasteur consist in vaccination with a modified germ, and the valuable investigations of Emmerich and his students in immunizing certain animals to swine-erysipelas have demonstrated the results that may be obtained by employing the virulent germ first in small numbers and then gradually increasing the dose. Again, it may be observed that the germs themselves are introduced into the body, and again it is also true that the more potent the cause the greater and more persistent the effect. The immunity that follows inoculation with a germ of full virulence is more marked and extends through a longer period than that which is induced by a vaccine.

3. By one or more treatments with sterilized cultures of the germs.

Immunity against the germs of typhoid fever, cholera, diphtheria, tetanus, hog-cholera, and several other diseases, has been secured by one or more treatments with sterilized cultures of these

germs. An interesting question arises in this connection: What constituent of the sterilized culture is it that confers immunity? All will agree that it is not due to the ptomaïnes that are present in some of the cultures. Another important class of substances present in these sterilized cultures contains the so-called toxalbumins, and to these we may possibly look for the cause of the immunity.

The teaching of some of the German investigators is that each pathogenic germ produces both toxins and a special immunizing substance. This is a very convenient theory. It supposes that each germ, while elaborating its harmful products, also produces a substance that will prevent its growth. Please bear in mind that this theory is wholly different from that which teaches that the germ may be finally killed by its own products. We know that many living things, both vegetable and animal, are killed by their own excretions, when the latter are allowed to accumulate about the former, but the theory of the production of a special immunizing substance by each specific germ is wholly different from this. The theory teaches that the germ produces a substance that confers immunity against itself and that the object in the production of this body is to confer the immunity. If we should find in nux vomica a substance that would render animals insusceptible to the action of strychnin, this fact would be analogous to the theory of the formation by each germ of a specific immunizing agent. This theory certainly presupposes a foresight and kindness on the part of the deadly germs of diphtheria and other infectious diseases which we hardly expected to find.

Fraenkel states that the toxic and the immunizing substances produced by the diphtheria-germs are two distinct bodies, the former being destroyed by a temperature of from 55° to 60° C., while the latter will bear a temperature of 70° C. or higher. He recommends that the cultures, sterilized by filtration through porcelain, be heated to from 66° to 70° C. and then be used in the production of immunity. However, he admits the possibility that the toxic substance may be converted into the immunizing body by the effect of the heat in lessening the virulence of the former, and there are many reasons for believing that this is the true explanation.

Brieger and Wassermann produced in guinea-pigs a certain degree of immunity from cholera by previous treatment with bouillon-cultures of the germ heated to from 65° to 80° C. Shall we conclude from this that the cholera-germ elaborates a special immunizing substance? Wassermann has shown that the immunizing substance in sterilized cultures of the comma-bacillus is contained in the germs themselves and is identical with the specific proteid poison of this germ. In other words, the substance that in larger doses kills, in smaller doses gives to the animal immunity from the living germ.

I think that we can answer the question as to which constituent of sterilized cultures gives immunity with considerable confidence if we recognize the following facts:

1. Marked artificial immunity to an infectious disease has not been obtained except by the introduction into the animal of the germ-substance, either enclosed in the cell-wall or in solution.

2. Sterilized cultures contain the germ-substance in one or both of these forms.

3. The same immunizing substance exists in the bodies of bacteria grown on solid media and killed by the action of chloroform.

4. The same immunizing effects, varying, however, in degree, are obtained with the bodies of dead bacteria morphologically intact or in solution, with living bacteria modified and reduced in virulence, and with very small numbers of the virulent germ.

With these demonstrated facts before us, I am ready to believe that the immunizing substance is a constituent of the bacterial cell itself; and as each kind of germ has its own peculiar poison (which in small doses confers immunity), this poison cannot come from the cell-wall; nor is it really a split product of the germ's action, but it is the essential characteristic part of the cell—that part which gives to the germ its distinctive properties. I believe that it is the nuclein.

The three methods of inducing immunity, which we have mentioned, reduce themselves to one and the same principle, *i. e.*, the introduction of germ-nuclein into the body.

The immunity that results from an attack of the disease is caused by the introduction of germs, living and more or less virulent; that which comes from vaccination is due to the introduction of germs, living but modified and reduced in virulence or administered in small quantity; that which is secured by one or more treatments with sterilized cultures is secured by the introduction of germ-nuclein so modified that it is no longer capable of reproducing itself.

Understood in this way, the production of immunity from disease becomes analogous to that which Sewall obtained with the venom of the rattlesnake, and Ehrlich with ricin and abrin.[1] Indeed, the venom of snakes, the poisonous vegetable proteids, abrin, ricin, and robin, and the cellular proteids of the pathogenic germs, have many characteristics in common. All are proteids, intensely

[1] Ehrlich tells us that one gram of ricin would be sufficient to kill one and one-half million guinea-pigs. The poison of tetanus can scarcely be more virulent.

poisonous; they lose their poisonous properties on being boiled in aqueous solution; different species of animals vary in their susceptibility to these poisons; they are much less poisonous when given by the stomach than when injected hypodermatically (the difference in the amounts necessary to produce fatal effects when administered by these different avenues being much greater than with either the vegetable or the putrefactive alkaloids). The immunity which is secured by all of these substances is gradually lost. A further resemblance between the vegetable and the bacterial poisonous proteids is to be found in the fact that immunity to one of these substances obtained from a given source does not confer immunity to another from a different source. An animal rendered immune to ricin is still susceptible to abrin, and one rendered immune to tetanus remains susceptible to diphtheria. Whether or not an animal made immune to the venom of one species of poisonous snake would still be susceptible to the venom of another species is not, so far as I have any knowledge, known.

The immunity obtained by Brieger, Kitasato, and Wassermann by inoculating with cultures grown in thymus-bouillon is due to the same principle that governs in the methods already discussed. Immunity was secured by the introduction of a modified bacterial proteid, the lessened virulence of the poison being due to a certain constituent of the thymus-extract. The nature of this constituent of the thymus gland will be discussed later. That the tetanus-germ is physiologically modified by its growth in the thymus-bouillon was demonstrated by the fact that it failed to produce spores in this medium, as well as by its diminished virulence.

Behring rendered about 40 per cent. of the animals experimented upon immune to tetanus and diphtheria by previous treatments with small amounts of cultures to which iodin trichlorid had been added. This is also most probably due to the fact that the chemical compound modified the bacterial proteid. Behring himself gives this explanation. He also states that it is a matter of indifference whether he employed cultures containing bacteria or those that are germ-free. By the latter he means cultures in which the germs have been deprived of their vitality or from which they have been removed by filtration. In either case the cell-proteid of the germ is present either in the form of cells or in solution, and this cellular proteid is the agent that induces immunity.

5. By treating a susceptible animal with the blood-serum of an immune animal.

Strange as it may seem, the principle upon which immunity is secured when the blood-serum of an immunized animal is injected into a susceptible one is essentially the same as that which holds good in the methods already discussed. A horse is rendered immune to tetanus by previous treatment with the modified bacterial proteid of that disease. As a result of these treatments a tetanus-antitoxin is generated in some organ or organs of the horse and circulates in its blood. When the blood clots this antitoxin is found in the serum, and if the serum be injected into a mouse in sufficient quantity, this animal becomes for the time being immune to the tetanus-poison, provided that the poison is not introduced in quantities so large that it will not be destroyed by the antitoxin that has been brought over from the horse.

The immunity actually does not belong to the mouse. It still belongs to the horse. It is stolen property, and will soon be lost. The cells of the horse, not those of the mouse, make the antitoxin. The mouse for the time being becomes physiologically a part of the horse, and it is by virtue of this relationship that the former is for the time being immune to tetanus.

The quantity of blood-serum that must in this supposed case be transferred from the horse to the mouse in order to give immunity to the latter will depend upon the relative weight of the animals and upon the degree of immunity possessed by the horse; and the degree of immunity induced in the mouse will be governed by these same factors.

Subsequent inoculation of the mouse with the tetanus-nuclein, in order to prove its immunity, may awaken the cell-activity of this animal, and then the immunity belongs to the mouse; but this is not true before the introduction of the germ. Behring has understood this point and has given this explanation.

We have seen that in all cases the cause that brings into existence the condition of immunity is a bacterial proteid. Now in order that this inciting cause may induce the condition of immunity, it must act upon something. We say that it acts upon the animal, but with this general statement we cannot be satisfied. Upon what organs of the body does it act? This question can be answered only tentatively at present, and the answer is founded upon the fact that we suspect that certain organs are acted upon, because certain results follow. Certainly, the cell-activity of the invaded host must be altered. The cells upon whose altered activity immunity depends are probably those of the spleen, the bone-marrow, the thyroid and thymus glands, and possibly other glandular organs. As already stated, this answer, which it may be noticed is given with reserve, is founded upon inference rather than upon direct demonstration. However, experimental evidence on this point is not wholly wanting. The disastrous effects that follow the removal or atrophy of the thyroid gland, and the wonderful alleviation

following the treatment of myxedema with extracts of this gland, are now well known to every member of the profession. These facts show that this gland must furnish an antitoxin, which is essential to the preservation of health and life. Lindemann has shown that the normal dog will bear doses of caffein which cannot be borne by the same animal after extirpation of the thyroid. Tizzoni and Cattani have found that rabbits from which the spleen has been removed cannot be immunized to tetanns.

These facts, together with others to be mentioned further on, render it altogether possible that the organs mentioned are concerned in the production of immunity.

Here an interesting question arises: In what way are these organs concerned in the production of immunity? Do they elaborate antitoxins, and if so what can be said about the nature of these antitoxins? These are questions in which I have been deeply interested for some time, and which I have attempted to solve. In this attempt I have borne in mind the fact that these organs are the sources of the nucleated white blood-corpuscles. Do these corpuscles contain a germicidal or antitoxic substance, and if so what is its nature? They differ from the red corpuscles in being nucleated, and from all other tissues in containing proportionally larger and more numerous nuclei. The chief chemical constituent of nuclei is a substance called nuclein, some of the general properties of which are known to physiologic chemists. Can it be that nuclein is the germicidal or antitoxic substance? Have the nucleins in general or as a class any germicidal action? As methods of isolating the nucleins are known, this question can be answered by experimentation. But before we begin with our experiments we will ascertain whether or not we can find that any such properties have ever been observed in the nucleins. I find that others have thought of the possibility that the nucleins may play a role in the production of immunity. In their very valuable paper, *Ueber Immunität und Giftfestigung*, Brieger, Kitasato, and Wassermann have the following to say:

"With the idea that the highly vitalized leukocytes or lymphocytes are concerned in the destruction of bacteria within the body, and that antitoxin substances are formed by the breaking down of these cells, we began our experiments with the best known and relatively most thoroughly studied decomposition-products of the white blood-corpuscles, the nucleins and the nucleinic acids, which we had prepared directly from pus. Later, Prof. Kossel had the goodness to make like preparations for us from pus and yeast, for which we again give him our best thanks. Cholera-cultures served us for the most part in these investigations. However, we found neither a decrease in the toxicity of these cultures on being treated with the nuclein bodies, nor could we render animals proof against the poison by previous treatment with cholera-cultures to which nuclein had been added.

"*A priori*, these negative results were probable because the preparation of the nucleins and nucleinic acids requires such powerful chemical manipulations that the resulting substances could only be such as would be devoid of all active energy. Moreover, we knew from previous researches with the bacterial poisons how susceptible similar compounds are to apparently indifferent chemicals, like alcohol, ether, etc. . . . . Therefore, we concluded to prosecute our studies with simple, aqueous, feebly alkaline extracts from organs rich in cells."

Having reached these conclusions, Brieger and his co-workers proceed to make their investigations with a feebly alkaline extract of the thymus gland.

This is the only instance, so far as I know, in bacteriologic literature, up to the time of the first publication of my results, in which anyone has even suggested that the nucleins might be germicidal or in any way concerned in the protection of the body against bacterial invasion, either in the production of immunity or in effecting a cure; and it must be admitted that this reference did not afford much encouragement to my theory. However, I was not altogether discouraged, because certainly no one should expect to find a highly active nuclein in pus-cells, the nuclein of which in the very formation of pus has been altered, probably more deeply and destructively than would result from "the apparently indifferent chemical reagents, alcohol and ether." As these German investigators failed to tell how the yeast nucleinic acids with which they experimented had been prepared, the hope was left to me that in this might rest the explanation of their failure. This hope found support in the fact that in the preparation of their thymus extract they heated it to 100° C., and certainly this temperature must have had quite as much effect in depriving the living nuclein of its energy as indifferent chemical reagents could have had. The fact that they obtained the results which they did with this extract after it had been heated to 100° is an evidence of the power originally possessed by the nuclein of this gland, for I think that it must be admitted, from the results which I have obtained, that the active agent in the thymus-extract with which Brieger and his co-workers experimented is a nuclein.

At first I tried to prepare an active nuclein from compressed yeast, but the results were not satisfactory. Compressed yeast contains a large amount of water and starch. The large proportion of the first-mentioned constituent caused a very small yield of nuclein, and there were many difficulties in the complete separation of the starch. There were, however, two other and more serious objections to the use of compressed yeast. The first of these is due to the fact that such yeast contains bacteria to begin with, and the task of preparing an active nuclein from it is similar to that of obtaining the same sub-

stance from pus. The second difficulty lies in the fact that compressed yeast contains many dead cells, and an active nuclein can be obtained only from living, healthy cells.

Next, I attempted to prepare an active nuclein from the ordinary brewer's yeast. But I found this also contaminated with bacteria.

At last, I was supplied, through the kindness of the Ann Arbor Brewing Company, and through Dr. Laasche, of Chicago, with unlimited quantites of pure cultures of yeast, without cost, and my thanks are due to the manager of the company named and to Dr. Laasche for this material.

With the aid of Drs. McClintock and Novy I have succeeded in preparing active nucleins not only from yeast, but from several organs of the body as well, and as the further elaboration of the principles of immunity and cure in the infectious diseases depends so closely upon the action of these nucleins, I must be permitted to go somewhat into detail concerning their preparation, their chemical reaction, germicidal properties, and physiologic effects:

YEAST NUCLEIN.—The cells from pure cultures of yeast are washed with sterilized water, then treated with a 5 per cent. solution of potassium hydrate, and filtered through paper (the Falten filter-paper of Schleicher and Schull being used for this purpose). Sterilization of the filter-paper is not necessary. The filtrate is feebly acidified with hydrochloric acid, and the proteid precipitated with 96 per cent. alcohol. The precipitate is washed with alcohol by decantation until the supernatant fluid remains colorless. The precipitate is then collected upon a filter, and, after all the alcohol has passed through, it is dissolved in very dilute potassium hydrate (0.25 to 0.50 per cent.). That this solution contains other proteid bodies besides the nuclein is shown by the fact that it promptly responds to the biuret, xanthoprotein and Millon reactions, but notwithstanding these impurities, solutions of nuclein prepared in this manner have markedly germicidal effects.[1]

A purer form of yeast-nuclein may be obtained by digesting out the other proteids from the alcoholic precipitate with hydrochloric acid and pepsin, in the manner which will be described in the preparation of animal nucleins.

The following experiments, in which the impure nuclein-solution was used, will illustrate its germicidal effects. In all cases the nuclein-solution was diluted with sterilized normal salt-solution, then placed in quantities of five c. c. in sterilized test-tubes, inoculated with the germs mentioned in each experiment; and plates made after varying intervals of the time show the germicidal effects. In making the plates, a platinum loop of constant size (with a diameter of two millimeters) was employed.

In the first four experiments, two c. c. of a 0.25 per cent. alkaline solution of nuclein, containing 0.9 milligram of impure nuclein per c. c. were diluted with three c. c. of normal salt solution, inoculated with the germ, and plates made as follows:

EXPERIMENT I.

Staphylococcus pyogenes aureus.

Time, . . .	5 min.	1 hr.	2 hrs.	14 hrs.	23 hrs.
No. of colonies,	1,110	0	0	0	0

EXPERIMENT II.

Staphylococcus pyogenes aureus.

Time, . . .	5 min.	1 hr.	2 hrs.	14 hrs.	23 hrs.
No. of colonies,	1,490	20	0	0	0

The strength of alkali in this dilute nuclein-solution, not taking into consideration the fact that some of the alkali is absorbed by the nuclein, is 0.1 per cent. The culture of the aureus used in these experiments grows abundantly in a 0.5 per cent. aqueous solution of potassium hydrate.

EXPERIMENT III.

The same solution nuclein as the preceding inoculated with the staphylococcus pyogenes albus.

Time, . . .	Immediate.	20 m.	1 h.	2 h.	17 h.	24 h.
No. of colonies,	680	0	0	0	0	0

EXPERIMENT IV.

The same solution of nuclein, inoculated with the bacillus anthracis without spores.

Time, . . .	Immediate.	20 m.	1 h.	2 h.	17 h.	24 h.
No. of colonies,	45	0	0	0	0	0

The total amount of impure nuclein in the five c.c. of dilute solution employed in these experiments was 1.8 milligram, or the strength of the solution was 1 part of impure nuclein to 2777 parts of water.

EXPERIMENT V.

The five c. c. used in this experiment contained ten milligrams of impure nuclein dissolved in 0.1 per cent. of potassium hydrate. The germ was the aureus.

Time, . . .	Immediate.	30 min.	1 h.	3 h.	5 h.	24 h.
No. of colonies,	Countless.	5,000	550	490	400	0

Many other experiments similar to this were made, but as the results were uniformly the same, repetition is unnecessary.

EXPERIMENT VI.

A loop of tuberculous sputum, showing from forty to sixty bacilli in each field when stained, was stirred up in beef-tea, allowed to stand for twenty-four hours, and injected into the abdominal cavity of guinea-pig No. 1. Another loop of the same sputum was added to a solution of thirty milligrams of impure yeast-nuclein in 0.08 per cent. of potassium hydrate, and this was also allowed to stand in the incubator at 38° for twenty-four hours, and then injected into the abdominal cavity of guinea-pig No. 2.

At the expiration of fourteen days both of these animals were killed. The omentum of No. 1 was a tuberculous mass throughout; while No. 2 showed not the slightest evidence of the disease.

The solutions of impure nuclein in dilute alkali may be kept at ordinary temperature in glass-stop-

[1] In fact, this is a nucleo-albumin rather than a nuclein.

pered bottles for months, without undergoing putrefactive changes. I have now one bottle of such solution, which was prepared on the 20th of December, 1892. One hundred and fifty milligrams—possibly a much larger quantity—of this nuclein may be injected, when properly diluted, under the skin, without any inconvenience, save slight pain at the time of injection and some soreness in the part, which disappears after a few hours. The last statement is true when the initial dose is small and the quantity is gradually increased. In one case, in which I gave an initial injection of twenty-five milligrams, an erysipelatous redness, as large as a saucer, appeared in a few hours. The temperature went up three degrees and the patient felt some nausea. The redness, however, rapidly disappeared, the temperature fell, and two days later I repeated the same dose without any ill effects. In some other instances I have noticed an elevation of temperature within an hour or two after the injection. This has happened only in those patients in which the size of the dose has been rapidly increased. Yeast-nuclein appears at times to have a cumulative action. When employed in large doses for several consecutive days the temperature may be markedly elevated.

Testicular Nuclein.—I have prepared this from the testicles of the bull, dog, guinea-pig, and rat. The testicles are stripped of their investing membranes as soon as removed, rubbed up and extracted repeatedly with a mixture of equal volumes of absolute alcohol and ether. Then the testicular substance is digested for some days (until the supernatant fluid fails to respond to the biuret test for peptones) at 40° C. with pepsin and 0.2 per cent. hydrochloric acid. The undigested portion, which contains the nuclein, is collected on a filter-paper and washed first with 0.2 per cent. hydrochloric acid, then with alcohol. Finally it is dissolved in a 0.5 per cent. solution of potassium hydrate and filtered through a Chamberland filter, without pressure.

This solution is clear, more or less yellow, and feebly alkaline. On the addition of nitric acid a white precipitate forms and dissolves colorless in the cold on the further addition of nitric acid. This nuclein does not give the biuret reaction, but does respond to the Millon test. The nitric acid solution of the precipitate becomes yellow on the addition of ammonia.

This nuclein also has germicidal properties, as is demonstrated by the following experiments:

Experiment I.

A solution of nuclein of unknown strength, obtained from the testicles of a bull, was diluted with four volumes of physiologic salt-solution, inoculated with the bacillus anthracis, and plates made, with the following results:

Time, ...	Immediate.	30 m.	1 h.	2 h.	3 h.
No. of colonies,	730	6	0	0	0

Experiment II.

The same solution inoculated with the aureus.

Time, ...	Immediate.	30 m.	1 h.	2 h.	3 h.
No. of colonies,	Countless.	2,850	0	0	0

Experiment III.

A solution of nuclein from the testes of a dog diluted with four volumes of salt-solution and inoculated with the staphylococcus pyogenes aureus.

Time, . . .	Immediate.	20 m.	1 h.	2 h.	17 h.	24 h.
No. of colonies,	680	0	0	0	0	0

Experiment IV.

Another solution from the same source diluted in the same manner and inoculated with the aureus.

Time, ...	5 min.	1 hr.	2 hrs.	14 hrs.
No. of colonies,	250	0	0	0

Experimemt V.

As several authors have reported the finding of a germicidal substance in the glycerin extract of certain organs, the following experiment was made: The testicles of a white rat were stripped of their tunics and extracted with glycerin. This extract, diluted with four volumes of salt-solution and inoculated with the aureus, gave the following results:

Time, ...	5 min.	1 hr.
No. of colonies, ...	1,240	75

I have used this solution of nuclein in doses of from five to twenty drops, diluted with saline solution, hypodermatically in one case of nervous exhaustion, and from the markedly stimulant effects observed, I conclude that it is to the testicular nuclein that the Brown-Séquard fluid owes its action. These effects, as I have observed them, with the very small doses given, soon pass away, but they are extraordinary.

Thyroid Nuclein.—The fresh gland is cut into fine pieces, extracted with alcohol and ether, and then digested with pepsin and 0.2 per cent. hydrochloric acid at 40° for two or three days, the digestive fluid being renewed several times and the digestion being continued until the supernatant fluid fails to respond to the biuret test. The undigested residue is collected upon a filter, washed with 0.2 per cent. hydrochloric acid, then with alcohol and ether, and finally dissolved in 0.25 or 0.5 per cent. solution of potassium hydrate.

This solution of nuclein gives a faint opalescence on the addition of nitric acid. It does not color on heating with nitric acid, but becomes markedly yellow on the further addition of ammonia.

A 0.25 per cent. alkaline solution of this nuclein dissolved with an equal volume of physiologic salt-solution and inoculated with the aureus showed a germicidal action as indicated in the following figures:

Time, ...	Immediate.	10 min.	1 hr.	20 hrs.
No. of colonies,	805	830	256	0

. I have not tested the effects of this nuclein on man.

EGG-NUCLEIN.—The yolk (two dozen eggs furnish a convenient amount of material to work with in the laboratory) is extracted with absolute alcohol repeatedly and until all the coloring-matter is removed. The substance is then digested for some days with pepsin and 0.2 per cent. hydrochloric acid. (In one instance I continued this digestion for four weeks, hoping to obtain a residue which would not respond to the biuret test, but this desire was not attained.) The undigested portion is collected on a filter, washed with dilute hydrochloric acid and subsequently with alcohol, and then dissolved in 0.25 or 0.50 per cent of potassium hydrate and filtered through porcelain.

This solution of egg-nuclein is colorless or slightly yellow. Nitric acid produces a slight, white precipitate, which dissolves in excess; this does not turn yellow on heating, but does so beautifully on the subsequent addition of ammonia.

EXPERIMENT I.

A solution of this nuclein in 0.25 per cent. potassium hydrate was diluted with four volumes of saline solution, inoculated with anthrax, and the following figures show the germicidal effect:

Time, ...	Immediate.	30 m.	1 h.	2 h.	3 h.
No. of colonies,	2,490	350	30	0	0

EXPERIMENT II.

Another portion of the same dilution, inoculated with the aureus, gave the following results:

Time, ...	Immediate.	30 m.	1 h.	2 h.	3 h.
No. of colonies,	Countless.	2,000	137	0	0

Besides the foregoing sources, I have obtained nucleins from the brain and the spleen, and these also are germicidal in their action. I have not tested the physiologic effects of the nucleins from the egg, brain, or spleen on man. I have employed the egg-nuclein on guinea-pigs, without any apparent deleterious effects.

I have introduced this sketch of some experimental work, illustrating a few of the many experiments that I have made bearing on this point, for the purpose of giving some correct idea of the ground upon which I make the assertion that nucleins are powerful germicides.

I think that all will now agree with me that the nuclein-forming organs of the body most likely have some concern in the production of immunity.

The nucleins formed by these cells or in these organs pass into the blood partly in solution and partly in the form of the multinuclear white corpuscles—the so-called phagocytes.

The germicidal properties of blood-serum are due to soluble nucleins. This statement rests upon work done by McClintock and myself, and the evidence upon which it is founded will be set forth in a paper to be read before this section.[1]

(To be continued.)

A PROBLEM IN ABDOMINAL SURGERY: WHY IS THE UTERUS RETAINED AFTER THE OVARIES ARE REMOVED?

BY HARRIS A. SLOCUM, M.D.,
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THIS question may at first seem to be a startling one and to savor of that ultra-radicalism which the more evenly-balanced minds in the medical profession are constrained to avoid, but a careful consideration of the facts that have been presented to my observation have led me, at least, to the conclusion that such is not the case; that, on the contrary, there are several good reasons for propounding such a query, and that our patients may be benefited in the future if we will take steps to inform ourselves upon such points as bear directly upon the subject.

This suggestion has been reached by observing the large number of women who have continued to suffer after the removal of the ovaries. On close questioning their pains are found to be just, or nearly, the same as before the operation. Sometimes they are described as being even worse, and, although we should use great discrimination in accepting the statements of a patient who considers herself to have been badly treated, yet I am sure that such suffering as remains is positive and great, while allowing for all exaggeration, conscious or unconscious, on the woman's part.

Having been assured by the operator, and honestly no doubt, that they would certainly be cured and freed from pain if they would consent to an operation, these women have submitted to it hopefully as the last thing to be done after weary months or years of treatment, and have too often failed to obtain the expected relief within varying periods of from six months to three years. These patients wander from one physician to another, and from hospital to hospital, with their pains not only unrelieved but gradually losing hope of relief; and as a rule, the physicians themselves, having learned that an abdominal section has been performed and the ovaries removed, yet the sufferings are just as severe, are often at a loss as to what should be done, and mentally consign the case to the class of "incurables," while they are writing a tentative prescription to afford relief for a time at least.

Continued suffering after removal of the appendages may depend upon a number of causes, and it is distinctly not claimed in this article that hysterec-

[1] To be published in THE MEDICAL NEWS.

tomy will prevent or remove them all, but, if performed under the conditions to be mentioned, I believe that it will certainly prove a legitimate and satisfactory method of dealing with one of the common sources of pain to the patient and disappointment to the surgeon.

Before determining upon the utility of the measure indicated in the title, a brief consideration is required of antecedent matters, the proper understanding of which will greatly influence us in forming our opinion regarding it.

First, as regards the physiologic relation of the uterus (and its appendages) to the body. The genital organism, considered in respect to the individual, is not at all essential to that individual's life. It is a specialized department designed for the purpose of continuing the species, and is not a vital part in itself. The function of the ovary is to to form the ovum; the *raison d'être* of the uterus is to receive and nourish the fecundated ovum; and menstruation is but a side-issue—the removal of furniture for a tenant that was not prepared to remain.

These organs contribute nothing to the maintenance of the body, and their removal, if not forbidden by danger to contiguous parts, evidently cannot affect the general nutrition, interfere with self-support, or lessen the powers of resistance to adverse influences.

To their tremendous importance as factors in influencing the moral life of an individual, and the latent influences that they exert over her equilibration and well-being, is given full recognition and acknowledgment; but these phases are not now under consideration, our only object at present being to determine upon the relative value of the procreative system as a vital part, or as necessary to the existence of the body.

Much testimony from various sources might be adduced to show the relative unimportance of the genital system *per se* to the general organism, but every physiologist will recognize this; and the physician, when recalling that we are dealing with a diseased and perverted system, will hardly fail to do the same.

The dominant nerve-supply of the uterus is that of the sympathetic, but it is probably of direct and physiologic use only during pregnancy, because the unimpregnated uterus is really an immature organ, and doubtless the nerve-fibers and ganglia are equally immature, so far as a correct performance of their duties is concerned, and this imperfect nerve-action may largely account for the predominance of the so-called hysterical element in women. It may be presented, in rebuttal, that pregnancy, when the nerves *are* developed, often causes still greater abnormal developments of mentality; but we should remember the artificial surroundings and accompaniments of the majority of gestations in civilized life, and the vast number of pregnancies that have for years been preceded by symptoms of uterine disease, permitting the inference that the muscular home of the fetus is in an imperfect condition for its work from the very beginning.

A complete knowledge of the power that this nerve-supply to the uterus exercises over the body in a healthy woman has not yet been demonstrated, but the untoward effects when these nerve-endings are disturbed are often manifest, and many cases in my experience present evidence that such disturbance exists in a large number of those who have already had their tubes and ovaries removed.

Let it be remembered that in the greater number of cases in the class to which I refer, inflammation has established itself not only in the tubes, but also in the lining membrane of the uterus, and in the canal tunnelling the uterus and leading to the tubes.

In the hands of the advanced operator of to-day this fact is recognized, and an effort is made to meet it. The uterus is curetted and drained and the appendages are subsequently removed, but the tunnel cannot be reached, and it remains to form a perpetual point of departure for subsequent attacks of endometritis, extending to an organ which is as disposed as ever to participate in such inflammation, whose nerve-supply is ever ready to indiscriminately affect the body adversely, causing the old pains and added reflexes, and which is yet deprived forever of its functions.

It is like an eye that cannot see, yet would bring about all the untoward results of a vicious refraction; like an ear that can no longer hear, yet tortures the body with vertigo and tinnitus; or like a brain that can no longer direct, yet brings to bear upon the body all the vagaries and illusions of an undeveloped or imperfect center.

The next question is: Would the removal of the uterus add to the mortality? Practical experience in this direction shows that the length of the operation is not greatly increased. If an operator begins an abdominal section with the direct intention of removing uterus and appendages, after having ascertained that the latter are irretrievably diseased, the application of another ligature to each uterine artery, the separation of the bladder from the uterus, and the severing of the latter according to Baer's method, with the subsequent attention to peritoneum and cervix, would take from ten to fifteen minutes. So much for the time. The testimony of many writers is to the effect that they are surprised at the small amount of shock sustained by their cases of hysterectomy. In the records of English and American journals, at the hands of many of my confrères and in my own experience, the same holds true.

It seems to shock the patient less to remove the uterus with its appendages than to remove the latter

alone, and I think the explanation lies in the fact that we at the same time remove the terminal nerve-filaments of the inferior hypogastric plexus of the sympathetic; that is to say, the active, working extremity of the nerve. A moment's consideration will recall the difference in receptivity to impressions between that possessed by the sensitive, developed nerve-ending and its trunk. A ray of light falling on an inflamed retina might cause agony, yet the cut end of the optic nerve might be exposed to ten times the amount without recognizing its existence.

Without doubt, the time required in operation is not greatly increased, while the subsequent shock appears to be really lessened.

Another danger that threatens is hemorrhage. In a paper read at the last meeting of the American Gynecological Association several deaths were reported from hemorrhage caused by slipping of the ligature, but one acquainted with the correct method of performing Baer's operation will readily see that if this is carried out as it should be, such a thing would be practically impossible, as the ligatures have tissue on both sides and cannot slip; they may become untied, and so might any ligature. Sepsis from the cervical canal, again, when the operation is rightly performed, is unknown to me. Reasoning from a knowledge of the condition of the tissues in the different parts, one would expect to have less danger from sepsis than if the cut ends of the tubes are presented to the peritoneum, for these are the very parts in which the disease is pronounced, while the cervix is generally healthy and would be far less likely to contain germs, and would, moreover, act as a far better drain than the occluded stump of tube and cavity of the uterus. When the uterus, tubes, and ovaries are removed *en masse* the infected cavity is not opened, the pus is sealed off in the upper part and cannot come in contact with the tissues.

Undoubtedly oöphorectomy has been performed, in many cases with subsequent cures, and my proposition is presented neither to disparage previous attainments, nor as a measure to be followed indiscriminately and without judgment, but because my experience with hospital and dispensary post-operative sufferers has led me to inquire into the causes of their sufferings, and I find that although some of these are due to adhesions, fistulæ, and hernias, the principal source of trouble is the persistence of a chronic metritis or endometritis, almost always involving the cornua, inaccessible, and practically incurable.

My proposition, therefore, is that we should consider the propriety of removing the uterus, as well as the appendages, in those cases in which both ovaries and both tubes are diseased beyond repair, and when their removal is clearly indicated; inasmuch as the uterus, if retained, is not only absolutely useless, but often becomes a menace to the system.

This measure has been advocated by other writers. Since beginning this paper my attention has been called to a statement made by Dr. B. F. Baer in an article in the *New York Journal of Gynecology and Obstetrics* for September, 1893; but my opinion has been reached almost entirely through my own observation.

I have said that this measure is not to be followed indiscriminately and without judgment. Cases will present themselves in which it would be unwise to carry it out, and each operator must exercise his judgment with each case; but the general proposition holds true, and one need but hear the symptoms and examine the tender, enlarged uterus in these barren patients to feel convinced that this organ should have been taken away when the abdomen was opened, as it has left the patient only a companion to her appendix vermiformis—useless, and possibly dangerous.

One question yet remains to be answered. Granted that patients are not having their lives risked to a greater degree than in oöphorectomy, have those patients who have already undergone hysterectomy given evidence of the benefit we are striving to obtain?

A just conclusion is difficult to reach for two reasons: first, because of the varied methods of performing the operation, and second, because of the character of the previous disease. The old method of constricting the cervix—a barbarous and imperfect surgical procedure in the light of to-day—often subjected the tissues to a painful and perilous tension and invited hyperemia; adhesions to the anterior abdominal wall were common, and we all know the malevolent influence of adhesions; the amount of uterine tissue requisite for the application of the *serre-nœud* was such that the endometrium was often encroached upon, and the stump that remained had poured into it the vast volume of the uterine artery—an inciter to riotous cell-action.

The greater number of hysterectomies have been performed by this or some similar method down to a recent date, and I think that a judicious observer would hesitate to draw a conclusion as to the results of an ideal hysterectomy from patients who had been subjected to one of the old methods of operation.

The character of the previous disease is so important a factor that it would be gross negligence to ignore it. A hysterectomy for carcinoma might readily fail to bring about such a restoration to health as one would desire. It is almost impossible to be sure that the whole of the diseased tissue has been removed. To give a just verdict, the operation should be the one approaching the nearest to surgical perfection, and the cases should be of the

character specified. Those that I have seen answer the question in the affirmative, *i. e.*, they *have* given evidence of such benefit.

An old Irish woman who was cleaning the clinic-room, saw a jar containing a specimen, and asked what it was. On being told that it was a womb with tumors attached, taken from a patient who was now well and working hard, she replied: "Well, well, she won't live long. Nobody can without their womb. Everybody knows that."

This dictum from an ignorant person is a faint reflection of the attitude of the medical world in general. The uterus has long been labelled *noli me tangere*, for reasons too numerous to be recounted here, and I am an advocate of such a policy so far as indiscriminate operation is concerned, feeling that it is our duty to our patients to make every effort to bring about a normal condition without recourse to surgery; but when the latter is shown to be inevitable, it is equally our duty to do the work as thoroughly as possible.

So far as I have been able to observe, removal of the uterus, when the ovaries and the tubes are doomed, does not lessen the feminine attributes of a woman. The knowledge that all diseased tissue has been removed and no useless organ allowed to remain is a comfort to the surgeon; its absence does not appear to predispose to vaginal descensus or other lower pelvic disorder, and, by allowing the minimum of blood to the cervical stump, just sufficient to nourish it, reduces the chances of epithelioma—the dreaded bane of so many women—almost to the vanishing-point.

ORIGINAL LECTURE.

LEPROSY.

Abstract of a Clinical Lecture, delivered August 9, 1893.

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I WISH this morning to show you a few cases of leprosy. Before so doing, however, let me review some of the main points regarding the symptomatology of the disease.

In your text-books you will find many synonyms of leprosy; they are chiefly *Lepra Arabum*, *Elephantiasis Græcorum*, *Leontiasis* of the ancient Greeks, and *Zaraath* of the Hebrews. This multiplicity of terms subserves no other purpose than that of interfering with the proper study of the history of the disease.

Leprosy is a chronic infectious disease, presenting under the microscope essentially the same histologic elements as we find in the granulation-tissue of new-growths.

Two types of leprosy are usually recognized: tubercular and anesthetic leprosy. Both types present certain prodromal symptoms of an indefinite nature, such as languor, drowsiness, loss of appetite, chills, etc. Tubercular leprosy, as a rule, is preceded by spots which you see in this case, at first of a pale or bluish-red hue, while later the maculæ become pigmented. This macular condition may precede tubercular leprosy by many years. If, as often occurs, the maculæ become the seat of tubercles, the skin becomes thickened and raised, leading to the formation of nodules varying in size from that of a pea to that of a walnut. The most frequent seat of these nodules or tubercles is on the skin of the face or hands, although the subcutaneous tissues and the parenchyma of the viscera are not exempt from invasion. When the nodules develop upon the face they may be circumscribed or conglomerate. In the latter case they give the face a peculiar leonine expression, which is symptomatic of the name used by the ancient Greeks, viz., *leontiasis*. The tubercles may form on the mucous membranes of the eyes, nose, mouth, throat, and larynx. In the case before us you find the palate deformed by a dense infiltration of leprous new-formation. Like all new-formations the tubercles undergo certain retrograde changes. They may atrophy, soften, and form abscesses, or they may undergo ulceration; leading, in the latter instance, to what are termed leprous ulcers. In many instances they may remain stationary, and undergo no change for many years. When they soften or ulcerate, they are accompanied by all the somatic symptoms of septic infection.

The second variety is known as anesthetic leprosy, as well as by the terms, lepra mutilans and elephantiasis glabra; this type of leprosy may develop as such from the beginning, or it may follow or accompany the tubercular variety of the disease. The nervous symptom in the beginning is usually hyperesthesia, followed by anesthesia of the involved districts. Trophic changes of the skin accompany this type of leprosy. In this case you will observe nearly all the trophic changes. On the palms of the hands the skin is tense, glossy, and parchment-like, whereas on the dorsum of the hands the skin is wrinkled and bullæ are present. At certain points you notice the absence of pigmentation, whereas on the other parts the pigmentation is increased. On account of the trophic changes, coupled no doubt with traumatism, the fingers and toes fall off, leaving painful stumps; in many cases all the fingers and toes are lost in this way. Mutilation occurring after this manner is spoken of as lepra mutilans. The cases I now show you are of the anesthetic type. You will note that there is anesthesia as well as analgesia of the hands and forearms; there is no regularity in the distribution of this anesthesia; in other words, the distribution of the anesthesia does not follow the course of any particular nerve or nerves. If you palpate the ulnar nerve of this patient you will find it thickened and marked by nodosities.

These changes in the nerve are the result of a perineuritis. The nerves most frequently involved by perineuritis are the ulnar, the median, and the peroneal.

BACTERIOLOGY.—In the year 1880, Dr. Armauer Hansen, of Bergen, claimed to have discovered in the nodules of the disease the bacilli of leprosy. This observation was corroborated by Neisser, since which time these organisms have been generally recognized as the pathogenic microbes of leprosy. The bacilli of leprosy resemble the bacilli of tuberculosis, not only morphologically, but

in their reaction to the Ehrlich method of staining, thus differentiating both pathogenic microörganisms from all other varieties. Unlike the tubercle-bacilli, the bacilli of leprosy are as sensitive to aqueous anilin solutions as are the majority of all other microbes. Cultivation-experiments with the lepra-bacilli, as well as attempts at inoculation of animals have been practically negative. It is probable that the nodules and infiltrations of leprosy are a result of the specific action of the bacilli. We find them in the skin, in the connective tissue surrounding the nerves, in the lymph-glands, and in the viscera; they are practically absent in the blood.

DIAGNOSIS.—The difficulty in diagnosis is only encountered in the earlier stages of the disease, before tissue-changes have developed. At this period leprosy may be confounded with syphilis, lupus, vitiligo, multiple sarcoma of the skin, and syringomyelia. I cannot at this time enter into the points of differentiation.

Confined to the district of Brittany there is a peculiar affection known as Morvan's disease, so called after the physician who described it. It is a chronic affection, characterized by neuralgic pains, anesthesia, and painless whitlows. According to the recent observations of Zambaco, Morvan's disease is nothing else than lepra mutilans.

In April, 1891, as chairman of the committee on pathologic anatomy of the Medical Society of the State of California, I read a paper on "Parenchymatous Aspiration." I shall limit myself in describing this method of diagnosis in leprous lesions.

All that is necessary in carrying out parenchymatous aspiration is an antiseptic hypodermatic syringe. The syringe that I show you has a large barrel, the object being to secure better suction. The packing is made of asbestos, while the needle is of platinum. By washing the barrel of the syringe with alcohol and heating the platinum needle in the flame of a lamp, I reduce the danger of septic contamination to a minimum. By firing the ordinary hypodermatic syringe you can make it aseptic for all practical purposes.

This is done by filling the syringe with alcohol, and as you eject the fluid you light it as it escapes from the needle. We will now proceed to apply this method of diagnosis: You first render the arm of the patient in this case ischemic by the application of a rubber bandage, although this maneuver is not really necessary. You next introduce the hypodermatic needle into a leprous nodule, and by drawing the piston back you obtain a very small amount of serum. This serum will contain the bacillus lepræ, which you can demonstrate by appropriate staining. The same method is applicable in searching for the bacilli in infiltrations, lymph-glands, and in the viscera. You will find it difficult at times to remove any fluid from the leprous lesions, in which case you may have recourse to one or two maneuvers; first, if you can discharge nothing from the needle you may separate the latter from the barrel of the syringe; now draw into the barrel of the syringe one or more drops of distilled water; by discharging the fluid through the needle, in which are presumably lodged the aspirated products, you may get sufficient material for staining.

If this procedure does not suffice in securing sufficient material for microscopic examination, then the following method may be adopted: The syringe is partially filled with an indifferent solution of salt, which is injected into the diseased tissue, the needle remaining *in situ*; after waiting until the fluid has presumably taken up sufficient pathologic products, it is aspirated into the barrel of the syringe.

The method I have just described bears some resemblance to the procedure of Manson (*Lancet*, August 23, 1884). This observer recommended the following method of demonstrating the bacilli in leprous patches: The patch is compressed in the jaws of an ordinary thin-bladed pile-clamp. This has the effect of drawing out the blood from the occluded tissues, and then the patch is pricked with a needle, and the exuded fluid is stained for the bacilli. You will observe from the description I have given you of Manson's method that it is inapplicable in leprosy of the lymph-glands, nerves, and viscera.

ETIOLOGY.—The main question is whether heredity or contagion plays the chief part in the spread of the disease.

Arning, one of the most competent observers, denies that heredity is the sole etiologic factor. Leprosy is a disease, so he says, perfectly independent of climatic and telluric influences. He urges most strenuously that leprosy is introduced and spread solely by leprous individuals. It is exclusively a disease of mankind, thus differing from tuberculosis, which also attacks the common domestic animals. Under favorable conditions the disease is probably transmissible directly from man to man or through food; the latter, however, is not proved. The fish-diet theory of Hutchinson is untenable on account of its exclusiveness. Examinations made by Rake of the chief articles of diet among the negroes and coolies of Trinidad show no evidence of lepra-bacilli. The results of direct inoculation seem to demonstrate that leprosy in a practical sense is not contagious. The successful inoculation of the murderer Kearin cannot be regarded as conclusive in the light of contradictory evidence.

Thus, a Norwegian physician inoculated himself and twenty healthy individuals with leprous material, without result. The same negative results attended the experiments of Profeta in ten cases.

As Arning says, we shall never be able to decide the question of direct contagion, or of infection through the intervention of the ground, of water, or of food, till we are able to show a comprehensible difference between living and dead bacilli, either by culture or by constant successful inoculations on the lower animals.

TREATMENT.—There is no specific in this disease. Improvement of hygiene and dietetics will do much toward prolonging the life of the individual. The value of chaulmoogra oil has not been definitely determined. The oil may be administered in capsules. The dose is from ʒss to ʒj daily.

The treatment by excision of the tubercles in the early stages of the disease may prove of some benefit. Germicides are without practical value. Arning has caused a disappearance of the tubercles in many instances by the local application of an ointment composed of salicylic and pyrogallic acids.

PROPHYLAXIS.—There is no doubt that strict confinement of leprous individuals is of the same value in preventing the dissemination of the disease as would be the isolation of tuberculous patients.

CLINICAL MEMORANDA.

A CASE OF ABSCESS OF THE SPLEEN.

By WILLARD C. HOWE, M.D.,
of Hawarden, Iowa.

The occurrence of abscess of the spleen would appear to be of extreme rarity if the literature at my command is to be taken as a criterion. In the leading surgical works very little is said regarding this particular pathologic condition, and a careful search of the best journals fails to reveal the records of but few cases. Because of its obscure history and progress, and the difficulty of an early accurate diagnosis, it is very unfortunate, if it is at all common, that so few cases have been reported for the benefit of the profession. A painstaking examination of the books and periodicals at my disposal discloses reports of but nine cases of abscess, one of purulent cyst, and one of perisplenic abscess.

William H. Flint[1] mentions one case of supposed abscess of the spleen in which there was free expectoration of pus and final recovery. J. M. Flippen[2] reports one case in which he removed nine pints of pus by free opening. Recovery followed. Hodenpyl[3] presented to the New York Pathological Society a specimen of abscess of the spleen. Death was due to chronic nephritis. Joseph Levi[4] reports two cases. Mena[5] records a case in a boy sixteen years of age, in which the abscess was consequent upon traumatism. There was vomiting of pus and also its passage from the bowels. Recovery ensued in eighteen weeks. M. Chondhoory,[6] of India, observed among thirty thousand cases of malaria only three cases of abscess of the spleen. One freely opened and was treated by drainage, boric lint, and iodoform; and recovery took place. Porge[7] records a case of purulent cyst of the spleen, and Councilman[8] presented to the Johns Hopkins Hospital Medical Society a case of perisplenic abscess.

The following case was one of extreme interest to me, and because of certain points detailed in the history, would seem quite rare.

On August 7, 1892, I was called to treat C. C., an American, single, twenty-one years of age, by occupation a well-digger. For some time he had been working unusually hard, his ambition exceeding his strength. Up to within three weeks, his health had been good. Except for the usual diseases of childhood he had never known a sick day.

Two weeks before, he had consulted a physician regarding a pain in his left side. A "shot-gun prescription" was given, but as this did no good the man went to another physician who without making the least examination or asking any questions, except as to the location of the pain, prescribed a chloroform liniment for external application. After three or four days' use of this, with no improvement, the man sent for me.

I found him lying upon his right side, with the left limb slightly flexed, and complaining of a dull, heavy pain in the left hypochondriac region, with slight tenderness on pressure. His temperature was 102°; pulse 120; respiration 18; the bowels were regular and the kidneys acting normally. Careful examination disclosed the following condition: A slight bulging over the normal location of the spleen; the ninth and tenth intercostal spaces were obliterated; the area of splenic percussion-dulness was increased in a direction downward and forward for about two inches below the border of the ribs.

Palpation revealed a tumor arising from the left hypochondrium. It was superficial; its edges were rather blunt, and its anterior border was notched. With one hand behind and the other in front it was found to be mobile and tender on pressure. Deep inspiration was painful and occasioned a downward movement of the enlarged mass. Upon auscultation a distinct friction-sound was heard. The only sharp pain complained of was upon deep inspiration or when the tumor was moved during the examination or upon a change of position of the body. The erect posture caused the tumor to drop somewhat downward. Taking these points into consideration a diagnosis of splenitis and perisplenitis was made. The only conditions likely to simulate this and obscure the diagnosis would be fecal accumulation in the intestine (splenic flexure of the colon) and a floating or enlarged kidney. Fecal masses in the intestine could for the following reasons be excluded: The percussion-dulness did not correspond with the course of the colon; pressure left no depression, the enlargement being elastic, whereas fecal accumulations are not so. Finally, the bowels had been regular in action and the passages normal in appearance.

Tumors of the kidney are more fixed; they do not follow the respiratory movements, and are not displaced by changes in body-posture.

As ice was not to be obtained, I ordered cold cloths applied and changed frequently night and day. Quinin in four-grain doses three times a day, was given, and morphin sulfate, gr. ⅛ in pills, was left to be taken from every two to four hours, as necessary, to quiet pain. The spleen continued to enlarge until it filled nearly half the abdominal cavity. The temperature ranged from 100° to 103°; the pulse from 100 to 120.

The pain now became more severe, the countenance assumed an anxious expression, and there was rapid loss of flesh. No fluctuation was to be obtained, but thinking an abscess was forming I ordered hot poultices applied continuously. Small boils the size of a pea began to form in profusion upon the neck, face, back, and anterior aspect of the arms. The lymphatics of the groin and axilla became enlarged and tender. On October 6th a consultation was held with Drs. J. H. Brower and O. W. Phelps. Dr. Brower agreed with me as to the location and character of the trouble, but Dr. Phelps considered it a plain case of abscess of the kidney.

The urine being normal in quantity and appearance, and showing no sign of pus or albumin upon several very careful chemical and microscopic examinations, together with the fact that we had a tumor arising from the left hypochondrium that was superficial, movable, with blunt edges and a notched anterior border, confirmed our diagnosis at least as to the location of the diseased pro-

[1] Reference-Handbook of the Medical Sciences.
[2] Times and Register, Philadelphia, 1891.
[3] Medical Record, New York, 1891.
[4] Satellite of the Annual, 1892.
[5] London Lancet, 1892.
[6] British Medical Journal, 1888.
[7] Journal de Médecine de Bordeaux.
[8] Johns Hopkins Hospital Bulletin, 1892.

cess. The quinin was continued in two-grain doses during the entire time, and ferrum redactum in three-grain doses was given three times a day.

The diet consisted of milk and beef-extracts. No stimulants were used. On October 11th Dr. Brower again saw the case with me, and we decided to make a free opening into the spleen. This was accordingly done between the axillary lines and just below the border of the tenth rib. About two quarts of thick pus were evacuated, together with small particles of broken-down splenic tissue of a mottled-gray appearance; the cavity was washed out with a warm boric-acid solution, a drainage-tube was introduced, and the whole was covered with iodoform-gauze and proper bandages. The temperature declined to normal, the pulse to 90, and the pain was materially lessened, but not entirely removed. The cavity was washed out daily and the drainage-tube finally withdrawn October 18th, and the wound closed. The spleen was very perceptibly smaller. On October 22d the temperature again began to rise, and the pulse to run up, the pain to return, and by the 29th all of the symptoms had returned with the same intensity as they had presented before the abscess was opened. Thinking the old cavity was refilling it was reopened, with negative results.

The bowels moved naturally on the evening of the 28th, but caused great pain, and restlessness continued during the night. The morning of the 29th the man felt a sudden desire to go to stool. A large quantity of clear pus streaked with blood was passed. In the next four hours the bowels moved eleven times, the character of the discharge being the same; the movements then ceased, and from that day on were quite normal. On November 5th the man was seized with a hard coughing spell and expectorated pus freely. This continued for about four weeks, but gradually ceased; strength returned, and on January 15th he was discharged cured. He has worked hard all summer and is now in good health. The case was also seen by Drs. R. D. Clark and A. DeBey, who agreed with us as to diagnosis and treatment, the latter being tonic and supporting from beginning to end, with free opening so soon as pus was known to exist. In this case the cause was a bruise. No septic trouble of serious moment developed, and recovery was a very gratifying surprise, as a fatal termination had been predicted.

AMPUTATION AT THE HIP-JOINT FOR RECURRENT SARCOMA OF THE THIGH.

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AMPUTATIONS at the hip-joint, with many others of the so-called major operations, have lost much of their formidableness through the efforts of surgeons to simplify the methods of operating, and to so carefully estimate all the factors in connection therewith as to render their performance much less of an undertaking than formerly. From the same causes the mortality records from this and other kindred operations are being constantly lowered. Not long ago this operation was regarded as a *dernier ressort*, and many times refused consideration by the surgeon, as offering too few chances for success. That such fears are ungrounded is undoubtedly true, and this is supported by the following case, which was looked upon by those in consultation as one which would result in death were the operation attempted.

The history of the case is as follows: Miss N. G., aged twenty-nine, in 1878 noticed a slight fulness at the middle third of the inner and posterior portion of the right thigh. Giving no pain, it gradually enlarged for a year, when it reached the size of an orange. It was removed, and consisted apparently of a simple fatty growth, enclosed in a distinct capsule. Six years passed by, when the cicatrix began to bulge, and soon afterward another growth made its appearance, being larger and more nodular. This was excised, and consisted of a number of encapsulated growths of a fatty nature, but containing more stroma. Care was taken to remove all traces of the growths and sacs, some of which were quite small. Recurrence took place in eighteen months, during which time the growth extended downward. Removal now showed softening in the structure of the growths, and many small ones rolled out in their capsules, looking not unlike eggs. Recurring after a year, the mass reached down toward the popliteal space, and assumed large proportions. The operation at this time was attended with difficulty, as the sheaths of the femoral vessels were involved and laid bare during the procedure. The neoplasm could not be entirely removed without ligating the femoral artery, and as this was not considered advisable, an early recurrence was anticipated, which followed in six months. As the mass had not extended any higher than the upper third of the thigh from the first, a high amputation was advised, but refused by the patient. An attempt was therefore made for the fifth time to remove as much of the growth as possible. Its character had changed decidedly, the mass having

become colloid and indistinct, spreading itself in all directions in and among the muscles. The wound, after this operation, never healed, but a large spongy mass protruded into the popliteal space, giving rise to considerable pain and numbness in the lower leg. The patient's condition had been very poor for some time. She was excessively anemic, had entire lack of appetite, was losing flesh rapidly, and had given up hopes of ever being relieved.

Advice was now given strongly in favor of hip-joint amputation as the only practical thing to do. It was accepted.

On July 8, 1893, the operation was performed at the Troy Hospital. The prognosis at the start was very unfavorable, as the pulse was feeble, high, and irregular. In this case it was very necessary that the operation should be so performed that the loss of blood would be reduced to the smallest possible quantity, and as well that the procedure should be completed as rapidly as possible. I had anticipated this by giving the subject careful thought and study for several days, and after going over the field of methods advised, discarded them all as too risky. I then planned and performed the operation as follows:

After anesthetizing with the Vienna mixture, I first ligated the femoral artery as it passed under Poupart's ligament, securing it above the profunda by the ordinary incision, which was closed at once with silkworm-gut sutures. There was no difficulty in performing this rapidly, although the presence of considerable adipose tissue necessitated a deep wound. Next, a longitudinal incision was made over the joint, *à la* Langenbeck, reaching from just below the spine of the ilium to below the trochanter. This was carried down to the bone. The soft parts being strongly retracted, all muscular attachments to the outer segment of the femur were severed. By rotating the bone first outwardly, then inwardly, the remaining muscles were cut away and the capsule exposed. Forced adduction of the leg gave room to open the joint, disarticulate the head of the femur, and divide the ligamentum teres. The separation of the soft parts from the bone was carried down, exposing the entire upper third of the femur, which was thus thrown out of the wound. This step of the operation, in all cases the most difficult on account of the many and close attachments of muscles to all sides of the upper part of the femur, was made more tedious by reason of the compression caused by an elastic band, which had been drawn around the highest point on the thigh as a safeguard against additional bleeding. As was afterward proved, however, this was of no value, and should be dispensed with, as it only hinders free access to the deep joint-structures. As the third step, a circular incision was made around the thigh, as high up as possible, and after the skin had retracted, a sweep of the knife severed all remaining tissues, removing the leg. There was but very little arterial bleeding, and but two or three small vessels needed ligating. The femorals were safe. After trimming up projecting muscular fasciculi, nerves, and tendons, intermediate silkworm-gut sutures were rapidly inserted and the stump dressed. Despite a rapid operation and little or no loss of blood, the patient's condition at the close was very poor.

Hypodermatics of brandy and nitroglycerin, hot bags, and other restoratives were administered, upon which the patient rallied. Lack of vitality evidenced itself by a breaking down of the fatty tissue in the stump, in the course of a few days, causing the flaps to separate. Supporting dressings were daily applied to the stump, and a slow but uninterrupted recovery took place.

In regard to the method of operating, the one employed in this case gave me the greatest satisfaction. The primary ligation of the femoral artery removes the necessity of considering the question of whether or not this very important factor in the operation can be met promptly and at the critical time. There certainly must not be any delay in so doing, for in a large majority of cases so advanced as to require the operation of amputation at the hip-joint, a few spurts from the artery would close the scene. So, to be assured of success as far as this factor is concerned, we should ligate the femoral artery first, and insure safety. The relief of mental anxiety should always be considered as an important duty.

As to the collateral circulation, there is fully sufficient to nourish the stump, and in this case no shrinkage or sloughing points were observed. To attempt by the old-time methods of operating to grasp the contracting bleeding mass and control the femoral is almost impossible, as is proved in less bulky stumps.

The use of needles and elastic bands and ligatures is, to my mind, equally dubious. The needles, although inserted presumably in a safe anatomic direction, may pierce the large vessels, especially if an anomaly exists, while in cases of emaciation of the parts or great swelling, difficulties immediately present themselves. Elastic bands passed around the entire circumference of the thigh in this locality do not carry any assurance of complete occlusion of the main trunks, as, lying so deeply and surrounded by so many projecting points of bone over which the bands ride, the pressure exerted by such bands is insufficient to shut off the current of blood.

The causes of death from amputation at the hip-joint are named as three: hemorrhage, septicemia, and shock. The primary ligation of the femoral artery removes the possibility of death from hemorrhage. The surgical technique of to-day presents the means by which we may remove the possibility of death from wound-infection. Giving the greatest care, by painstaking administration of stimulants and tonics, to the patient's system before, during, and after the operation, reduces to a great degree the liability to a fatal issue from shock. There are exceptional cases in which, through previous loss of blood from ulceration of growths, or systemic poisoning from absorption from ulcerated surfaces, or an exhausted condition from long-existing disease, these determining factors in a prognosis may be considerably influenced. However, even frequently handicapped by these, I believe that in primary amputations of the hip-joint we should confidently look for a considerable reduction in the percentage of mortality as at present rated.

RHYTHMIC TRACTIONS OF THE TONGUE IN ASPHYXIA FROM CHARCOAL FUMES, AND REPORT OF A CASE OF ASPHYXIA NEONATORUM REVIVIFIED BY LABORDE'S METHOD.

By ALBERT S. ASHMEAD, M.D.,
of New York.

There seems to have recently, and very seriously, come into vogue a system of revivification, proposed by Dr. Laborde, of Paris, which is called by its author *the method of rhythmic tractions of the tongue*. As early as 1874 rhythmic tractions of the tongue were performed at Tokio, for the resuscitation of persons asphyxiated by carbon. This was the method as I have seen it employed and have employed it myself at the Tokio Hospital:

The patient having been placed upon the operating-table, brandy, largely diluted with hot water, was injected into the rectum, as much as it would receive. The Sylvester method of artificial respiration was employed, and modified as follows: At each elevation of the arms above the head the tongue was drawn forward by an assistant, and rapid passes with paper fans, soaked in water and aqua ammoniæ, were made over the mouth, to get into the lungs as much vapor of ammonia as possible. The tractions were from 18 to 20 to the minute. In a very short time, in the successful cases, the return of the capillary circulation was noticed first in the toes and then to creep up the lower extremities.

The first case which I attended was in a Japanese child, three years old. It had been poisoned in the beri-beri season by the charcoal fumes of the *hibatchi*, the little Japanese stove. Carbonic poison is frequent in the summer months, owing to the necessity of keeping the sliding doors closed in the daytime on account of the wet weather. With us this kind of accident occurs more usually at night; but the Japanese stoves are always cold at night, because the people cannot then attend to the necessary ventilation.

It is therefore to the Japanese that the honor of originating the method of resuscitation would at first seem to belong. There is even in the use of the ammonia a scientific point very creditable to Japan. Ammonia furthers the separation of carbon poison from hemoglobin, and carbon greedily absorbs 90 per cent. of ammoniacal gases.

But it ought, in fairness to Dr. Laborde, to be added that, although his discovery would seem, by what I have said, to have been anticipated by the Japanese, it is really not so. Their method, based on another idea and aiming at another immediate action, is really another method. The Japanese doctor means to get ammonia into the lungs, and, with that object in view, he draws forward the tongue in order to clear the passage. It is evident by what will be said and quoted, that the object of Dr. Laborde's method is to incite respiratory movements.

Laborde's method of rhythmic tractions, as used by Dr. Ettore, of Rimini, Italy, in the case of stillbirth following uterine inertia and premature detachment of the placenta, the child having still hardly perceptible cardial pulsations, was as follows (he had failed in the attempt of catheterism as advised by Schroeder, and in the application of the methods of Schultze and Pacini):

"Having placed the newborn in a half-sitting position on the border of the bed, and having him held in that position by an assistant, I opened the buccal cavity, and taking the tongue between the thumb and index finger of the right hand, I began to perform on it tractions, at short and regular intervals, intensifying them gradually; and what was not my amazement and my delight when, after the time necessitated by about twenty tractions, the little thorax heaved, while at the same time the bambina uttered a faint squalling. Encouraged by this success, I continued the tractions and sousing simultaneously the little body with very cold water—a cutaneous stimulation, which, as I have said, had been ineffective in the first instance—I obtained after a short while a regular breathing, complete, with a wailing now quite vigorous."

Here is Dr. Roux's (of L'Orient, France) report of the use of the same method in another case: "When I came, the head was at the superior strait with prolapse of the cord. On auscultation the stethoscope indicated no heart-beat. The Tarnier forceps was promptly applied. The child did not breathe, the heart-beats were hardly perceptible to the hand, and very rare. The tongue-tractions produced a hiccough at rapidly decreasing intervals, followed by regular breathing. The first crying came after forty minutes."

The purpose of all attempts at resuscitation in case of any asphyxia is to arterialize the blood quickly. This can only be done by introducing oxygen and eliminating carbonic acid. The tractions open the aërial channels, and this is all that the Japanese method aims at producing. Laborde's method has for its object to call into existence respiratory movements.

The ammoniacal fanning is, however, an additional stimulant to respiratory movement—only its principal object is is to introduce a substance that will antagonize carbon.

The application of Dr. Laborde's method to the case of neonati shows most strikingly the difference of the principle on which it and the Japanese methods are founded. For in the case of the new-born there is no poisoning gas to be overcome, except what would be naturally developed in the organism, the object of this treatment being simply to establish respirations.

Two nights ago I myself made use of Laborde's method, with a modification borrowed from Sylvester's method, in conjunction with the Japanese fanning. In the child of a unipara, stillborn, after protracted labor, with a posterior position, and the application of forceps, thirty or forty tractions were followed by the first gasp, and gradual resuscitation followed. Household ammonia and water were used for the fanning. Terebinthinate preparations may be substituted for ammonia. Turpentine vapor is an oxidizing agent in the same degree as ammonia.

A CASE OF LEPTOTHRITIC PHARYNGEAL MYCOSIS.

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DURING last winter the following rather rare affection of the throat presented itself for treatment. Mrs. A., twenty-seven years of age, said that she had been treated for several weeks by her physician for a "hacking cough and sore-throat." She was much alarmed about herself and feared pulmonary trouble. She remarked that something must be growing on the sides of her throat, as it felt rough and dry. Her voice was slightly changed, and an examination showed the tongue slightly coated with a white fur. The mucous membrane of the pharynx was somewhat congested and both tonsillar surfaces were thickly studded with white pyramidal bodies resembling the soft cheese known as "cottage curd." Similar bodies were scattered on the sides of the pharynx, and an almost solid mass occupied the depression between the anterior and posterior pillars of the pharynx. There were a few on the base and sides of the tongue.

The diagnosis of leptothritic pharyngeal mycosis, as

designated by Ruault, of Paris, was made, and subsequent resistance to all local measures confirmed the opinion.

The treatment was as follows: The excrescences were scraped off from the mucous membrane with a moderately sharp curet, and a strong solution of subsulfate of iron was applied. While this completely removed them, in two days the growth was as thick as before. Curetting was continued and different applications made every few days for several weeks, with no beneficial results. The condition was improved more noticeably under the use of sodium bicarbonate dusted over the areas. The improvement was, however, but transitory.

The patient refused to allow the use of the electric curet, knife, or strong escharotics, so that active measures were suspended.

As the remedial agents afforded by the materia medica had been exhausted, it is to be regretted that the woman would not consent to be a subject for further experimentation, and allow a test of surgical means. Dr. Dembicki's successful treatment with tobacco-smoke was not tried.

I believe that the electric curet, conscientiously used, and followed by the application of some astringent, would have effected a cure.

The case is reported because of its infrequency and lack of information as regards efficacious treatment.

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MEDICAL PROGRESS.

Symmetrical Gangrene of the Feet in a Child.—Power (*Lancet*, No. 3648, p. 249) has reported the case of a girl, four years and eight months old, but looking much younger, who presented gangrene of both feet. Two winters before she had been greatly troubled with chilblains on both feet. A year later she was treated for wasting and swelling of the feet and legs as high as the knees. The feet and legs were said to become livid in the evening, and to be of natural color during the day. The child had never walked or crawled, but there was no paralysis of the legs, and the want of power seemed to depend upon simple weakness. She had been fed from birth on artificial milk, and had had an attack of measles at the age of eight months. There were no indications of syphilis. The little patient was pale-faced, dark-haired, and thin. The pulse was 144, regular, and of high tension. The radial arteries were tortuous, thickened, and readily felt. Pulsation could be felt in the dorsalis pedis artery of each foot and in both posterior tibial arteries. The skin appeared natural; the nails were cracked transversely, and the finger-tips beneath the nails were livid. Nothing abnormal could be detected in heart or lungs. The eyes were normal; there were no retinal hemorrhages. All of the toes on both feet were shrivelled and black, the gangrene extending as high as the metatarso-phalangeal joints. On the inner side of the left heel was a small patch of black skin, about half an inch in diameter, and at a corresponding point on the inner side of the right heel the skin appeared to be redder than natural. A generous diet was prescribed, with half an ounce of brandy every twenty-four hours. Small doses of tincture of opium and aromatic spirit of ammonia were given frequently. In the course of a few days a line of demarcation began to form along each series of metacarpo-phalangeal joints. The slough on the left heel had separated, leaving a small superficial ulcer, whilst the red patch on the right heel had completely disappeared. A little later the phalanges of the little toe of the left foot had completely separated, and at a somewhat later date the remaining phalanges on both feet were removed. The patient thereafter made an uninterruptedly good recovery, except for the appearance of a small black spot at about the junction of the upper with the middle third of the anterior aspect of the right tibia. The child was again ordered one-minim doses of tincture of opium, and the spot disappeared in the course of a few days. The urine, which was repeatedly examined, was usually neutral, or feebly alkaline, and it was at all times free from sugar, blood, and hemoglobin. On one occasion, at a late date, it was acid and contained a faint trace of albumin.

The Diagnostic Significance of the Gonococcus.—Neisser (*Deutsche medicin. Wochenschrift*, 1893, Nos. 29, 30) contends that there can be no doubt that the gonococcus is the cause of gonorrhea. The diagnosis of gonorrhea, in the male or in the female, can in many cases be made from the symptoms alone; but in a large number, particularly in cases of chronic course and attended with mild subjective and objective manifestations, the diagnosis will depend upon a demonstration of the presence of gonococci. Examination for gonococci is indispensable in cases in which a question arises as to the infectiousness of the discharge. As the therapeutic procedures to be adopted will depend upon the presence or absence of gonococci, the examination for the organisms is to be made not only before, but also during the whole course of treatment. In most cases a microscopic examination will suffice; on account of the imperfection of cultural methods, these will be employed only in exceptional instances. If gonococci be found, there can be no doubt of the diagnosis. Observations that yield negative results are not to be accepted as conclusive, as gonococci may be concealed in lacunæ or invaginations of the mucous membrane, or may be present in numbers so small as to escape detection. In such a case repeated examination, as well as cultural observations, will be necessary. The clinical manifestations will have to be studied in connection with the microscopic findings. If gonorrhea be found in a married person, both husband and wife should be placed under observation, and if necessary both should be subjected to treatment.

Immunization of the Fetus by the Vaccination or Variolization of the Mother.—At a recent meeting of the Paris Academy of Medicine, Hervieux reported the outcome of a study of the influence upon the fetus of revaccination of the mother. Of 152 cases in which the mothers were revaccinated during the last months of pregnancy and in which the infants were vaccinated soon after birth, in only 46 did the vaccination of the children fail. Experimental observations seem to indicate in a general way that immunization of the mother is only exceptionally transmitted to the offspring. Thus, 500 sheep were inoculated with vaccine virus and their offspring were also inoculated soon after birth, with positive results in

all but 35. In several cases an attack of variola in a pregnant woman did not render her offspring insusceptible to vaccination shortly after birth. In some instances, however, the infant for several months proved refractory. Recent investigation has shown that microörganisms may pass from the maternal to the placental circulation if there be an erosion of the placenta.

Diminution of the Electric Resistance in Cases of Traumatic Neurosis.—Mann (*Berliner klin. Wochenschr.*, 1893, No. 31, p. 749) has found that in cases of traumatic neurosis attended with cerebral manifestations (headache, vertigo, tinnitus) there is frequently a diminution of the resistance ordinarily offered to the passage of a galvanic current through the head. Such a diminution had previously been found to exist in cases of cerebral hyperemia, and it is believed that it is also this condition upon which the alteration of the resistance depends in cases of traumatic neurosis. The practical value of this knowledge resides in the fact that it may be of diagnostic significance in cases of traumatic neurosis in determining whether or not complaint of cerebral symptoms has an objective basis. A negative result, however, cannot be considered as excluding traumatic neurosis.

THERAPEUTIC NOTES.

The Physiologic and Therapeutic Activity of the Hot Bath.—At the recent German Congress for Internal Medicine, Baelz (*Wiener medicin. Presse*, 1893, No. 34, p. 439) pointed out the utility of the hot bath, the lowest thermometric limit for which should be placed at 104° F. The warmer the bath, the more important is it first to wet the head with hot water, in order to relax the cerebral vessels, so that, when subsequently the cutaneous vessels become filled with blood, there shall be no danger of cerebral anemia. The duration of the bath may be from five to twenty minutes; it should cease as soon as a sense of heat or palpitation of the heart is felt. Upon entering the bath, goose-flesh, contraction and pallor of the skin appear for a few seconds, to be gradually followed by relaxation and redness. The pulse, at first transiently slowed, gradually becomes quickened; the arteries become relaxed and the temporals appear tortuous. The pulse-wave is full, the curve high. The temperature, taken beneath the tongue, rises 3.6° or more. This elevation takes place not only in consequence of accumulation of heat, but also as a direct result of the absorption of heat. After leaving the bath the temperature usually rises rapidly from 0.2 to 0.4° additionally, to reach the normal again in from half an hour to two hours. On leaving the bath a sense of refreshment is felt and a copious perspiration breaks out. A gentle douche of cold water is agreeable. There is no danger of "catching cold"; on the contrary this danger is obviated by the hot bath, in consequence of the paresis of the cutaneous vessels from the effects of the heat, experiments and sphygmographic tracings having shown that for some time after the hot bath reaction of the vessels to cold is wanting. This is not the case if the temperature of the water has been at body-heat or lower. The prejudice that the hot bath is debilitating in any way is entirely unfounded; on the contrary two or three hot baths a day are exceedingly useful in mountain-journeying. Investigation has shown that, in contradiction of former belief, albuminous metabolism is not increased in the hot bath. The hot bath is therapeutically applicable not only in cases of nephritis, but also in cases of capillary bronchitis and broncho-pneumonia, especially in children. Its efficacy here depends upon the diversion of the blood from the pulmonary circulation to the cutaneous vessels. The temperature of the bath should be from 104° to 109.4° F.; its duration from five to fifteen minutes, the patient being removed as soon as the skin becomes reddened. If the body-temperature is high a half-bath may suffice; pyrexia is, however, not a contra-indication for the bath. Sprinkling the head or chest with cold water is to be recommended to stimulate deep inspiration. After the bath perspiration occurs; respiration is easier; the pulse better; and, as a rule, calm sleep follows. The hot bath also acts admirably in the treatment of rheumatism and of menstrual colic. Organic disease of the nervous system, particularly posterior spinal sclerosis, and atheroma of the bloodvessels, are contra-indications to the use of the hot bath, which must further be used with great circumspection in case of organic disease of the heart.

Venesection for Eclampsia Gravidarum.—Kirk (*Lancet*, No. 3648, p. 247) has reported the case of a woman who, in the eighth month of her first pregnancy, was seized with violent headache followed in two hours by general convulsions. Other convulsions occurred, loss of consciousness persisting in the intervals. Following a violent attack, a bleeding of 16 ounces was practised. Six ounces of pale urine were withdrawn from the bladder and found to be markedly albuminous. There was no anasarca and the ankles did not pit on pressure. Labor had not yet begun. After the bleeding the fits became shorter, though continuing with unabated frequency. Finally, however, labor set in and delivery was accomplished by means of the forceps. The child was stillborn. The woman made a good recovery. In a second case, in a woman in the ninth month of her first pregnancy, headache and vomiting were followed by convulsions. After a severe seizure a bleeding of 24 ounces was practised. In this case there was also no anasarca or pitting of the ankles. Some urine withdrawn by the catheter was markedly albuminous. Labor was progressing, the os being partially dilated. Four convulsions occurred within an hour, and upon their cessation the forceps was applied and a living child delivered. Six hours after delivery the convulsions recurred with their previous intensity, but finally ceased after four attacks within an hour. Recovery was thereafter uninterrupted. In both cases the blood-serum was examined for uric acid, but none was found.

A Depilatory.—

℞.—Iodi pur.	. . . . .	gr. xij.
Olei terebinthinæ	. . .	♏xx.
Olei ricini	. . . . .	f ℥ss.
Alcohol.	. . . . .	f ℥ijss.
Collodii	. . . . .	f ℥j.—M.

S.—Apply with a brush once daily for three or four days successively. Upon the removal of the layer of collodion the hairs will be found also to come away.

Butte, *Pharm. Post*; *Wien. med. Bl.*, No. 32.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 7, 1893.

AUTOPATHOGRAPHY.

Von Ziemssen's *Handbuch der Allgemeinen Therapie* contains a noteworthy article by Oertel on the Therapeutics of Disturbances of the Circulation, etc., in which with great clearness and minuteness there are described the symptoms of a certain person afflicted with the disease-complications set forth by the learned author. It is an open secret that Oertel's patient was himself. And how often have such illustrations of autopathography occurred! Sydenham said of gout that "more wise men than fools are victims of the disease," and in writing of the physical disease his eye was also turned upon himself. Thomsen's disease was described by a sufferer in whose family the affection existed for five generations, and if we do not err, Salter, whose book on asthma is, perhaps, the best monograph on the subject written in England, spoke from much personal experience with the disease. Hay-asthma was first accurately described by an English physician, Bostock, in a report of "a case of a periodical affection of the eyes and chest," before the Medico-Chirurgical Society of London, in 1819. The "case" was himself. The sad illustration of Laennec is well known. His name is naturally associated in the same breath with pulmonary tuberculosis, of which he died at 45, from his epoch-making work, the affection having been discovered by his own methods and instrument—auscultation and the stethoscope.

Angina pectoris was described by Heberden in 1768. It is said that an unknown correspondent gave Heberden a description of his case and bequeathed his body for examination after death. John Hunter made the examination and was himself a great sufferer from the disease, and died in a paroxysm of it. Others have had scientific curiosity aroused as regards this terrible disease by their own anguish. The Medical News of March 26, 1892, contains an article on the subject, by one who suffered while he wrote and who died a year thereafter of organic heart-disease and angina.

The medical historian could multiply such sad instances many times. In literature hundreds of famous books are illustrations of the interest aroused in mental and social suffering by the bitter private experience of the writers with the ailments they set forth with a vividness and accuracy that naught else but personal realization could give. Perhaps all great writers have been great, and have so surely sent their words home to the hearts of their fellows only because the steel of pain had first penetrated their own souls. Dante, it was well said, had been in hell before describing it, and DeQuincey, Leopardi, and Heine spoke so convincingly because they spoke of what they knew by bitter experience.

But it is not only in writing that one's own pain may give him exactness and interest; it is also of greater use in teaching the physician to have that sympathy and accuracy of perception with the disease of his patient that shall lead him to treat disease there just as if it were in his own person. It is an often-noticed fact that opticians and oculists have been impelled to their specialty by their own personal ocular history—"they all wear spectacles"—but it is true, though less recognized, that the optician who has suffered from ill-made or ill-adjusted lenses is certain to do better work for his customer, and the ophthalmologist who has carefully studied his own optic defects will the more readily detect those of his patients.

Herein also lies the wisdom and propriety of women studying medicine, as all women-physicians so keenly recognize. When women rise to their opportunity there will be splendid examples of medical training and success in their ranks, because in treating the diseases of those of their own sex and of children we must expect great things of them.

In little things or in great the rule holds good; it is personal experience that makes the eye clearer to detect elsewhere what one has himself endured, and that innervates the emotions to cure in others what has been felt as so grievous in self. There are, therefore, numerous reasons why physicians should not neglect the intimations and the lessons derivable from personal illness. It was a myth of old-time folk-lore that pearls and diamonds were the crystallized tears of the child of Life cruelly whipped by the step-mother, Experience.

THE ETIOLOGY OF CHRONIC ARTICULAR RHEUMATISM.

IT has long been a matter of doubt as to whether or not any etiologic relation exists between the three groups of affections that are ordinarily designated acute, subacute, and chronic rheumatism, with a disposition to decide the question in the negative. Of the three, acute rheumatism is the only one at all well defined, from the standpoints of symptomatology, morbid anatomy, and therapeutics. Into the other two groups are usually cast all of the vague and uncertain painful conditions affecting musculofibrous and fibro-articular structures. The confusion attending the classification of these is eloquently indicated by the absence of a distinctive semeiology, by the want of a definite pathology, and by the lack of a distinctive therapy. There have even not been wanting observers that were willing to include some of the cases of chronic articular rheumatism among the tropho-neuroses, dependent upon changes in the spinal cord.

Little light has been thrown upon this obscure subject, but a recent communication by SCHÜLLER (*Medical Record*, 1893, vol. xliv, No. 13, p. 389) would seem to point the way for further investigation in at least one direction. This observer has made a clinical, anatomic, and bacteriologic study, embracing 116 cases of so-called rheumatic articular inflammations. In these he found hyperplastic inflammatory changes in the synovial membranes of the affected joints, and from the tissues and fluids of which he was able to isolate a peculiar bacillus, to which he ascribes etiologic influence. He was further able to transmit this organism to lower animals, inducing lesions in these comparable to those observed in man, and again to obtain from the lesions the specific bacilli. The organisms are described as being from 2.24 to 2.76 μ long, and from 0.75 to 0.95 μ wide; usually straight, though sometimes slightly curved or angular; presenting bright granules at either pole; staining readily with carbol-fuchsin; and decolorizing with acids, etc. In culture they grow best in the dark, at a little above ordinary temperature, forming opaque-white colonies that slowly liquefy gelatin.

These observations are not to be accepted as final, as the investigation has not been entirely completed. There is, however, no *a priori* ground on which to reject the conclusion to which they lead. On the contrary, there is growing evidence that acute rheumatism is of microbic origin (see THE MEDICAL NEWS, August 26, 1893, p. 247), and it is not too much to hope that before long we shall know more than we do concerning so-called subacute and chronic rheumatism, which, as has long been believed, are not at all rheumatic in nature.

Bacteriologic science has met with inevitable, and not unhealthy, antagonism, with the result of stimulating better work, with more reliable and more permanent results. As a consequence, it is likely that fewer mistakes will be made, and less hasty conclusions reached, than has been the case in the past, and we can look forward to the future of bacteriology with growing hope and confidence.

THE TREATMENT OF EXUDATIVE TUBERCULOUS PERITONITIS BY MEANS OF INTRA-PERITONEAL INJECTIONS OF STERILIZED AIR.

ALTHOUGH an adequate explanation of the sequence of events may be wanting, the now well-known clinical fact remains that in some cases of tuberculous peritonitis abdominal section is followed by a disappearance of the preëxistent symptoms. Many theories have been proposed to account for such an unanticipated occurrence, but none yet brought forward is entirely satisfactory. At one time it was believed that the antiseptic fluids used in irrigating the diseased peritoneal cavity were responsible for the fortunate result, but it was subsequently found that the outcome was the same when sterilized distilled water was employed, or even if the peritoneal accumulation was simply evacuated and no irrigation at all practised. Some authorities ascribed the result to the influence of light upon the disease-process; while others suggested exposure to the air as the cause; and yet others made the necessary operative manipulations responsible. From a number of

considerations, Nolen (*Berliner klinische Wochenschrift*, 1893, No. 34, p. 813) comes to the conclusion that the improvement must be due either to the changes in the circulatory conditions brought about as a result of the evacuation of the fluid accumulation, or to the contact of the air, in a chemic, physical, and bacteriologic sense. The first explanation is at once invalidated by the fact that recovery does not follow evacuation of the fluid by puncture. Now, it was reasoned that if the good result depended upon exposure of the diseased peritoneum to the air, that end could be attained by the injection of sterilized air into the peritoneal cavity through the puncture-opening necessarily made for the evacuation of the ascitic fluid. As the innocuousness of this procedure had already been demonstrated, it only remained to practise it in a suitable case. In three cases so treated the results fully confirmed every anticipation. In none did the ascites recur after a single injection of air. In two, permanent recovery ensued; the conditions in the third rendered such a result out of the question. The apparatus employed in the manipulations is extremely simple. After the fluid has been evacuated by siphonage, the air contained in a glass jar is expelled by means of hydrostatic pressure, and passed through sterilized cotton, and then through warm sterilized distilled water, and finally, by means of a rubber tube and the puncture-needle, into the peritoneal cavity. The insufflation is made gradually, the abdomen meanwhile being gently kneaded. It should cease when the abdomen commences to become tense. The air is aspirated by reversing the process, the removal of the hydrostatic pressure establishing a current in the reverse direction. No harm will result if a small quantity be permitted to remain. The operation has proved quite painless, and no unpleasant sequelæ have been observed. Some degree of meteorism persists for a day or two days afterward.

EDITORIAL COMMENTS.

Admissibility of Expert Testimony Not Based on Personal Experience.—Although it might not be admissible merely to repeat what a witness had read in a book not itself admissible, still, when one who is competent on the general subject accepts from his reading as probably true a matter of detail which he has not verified, the fact gains an authority which it would not have had from the printed page alone, and subject, perhaps, to the exercise of some discretion, may be admitted. So holds the Supreme Judicial Court of Massachusetts in the case of Finnegan *v.* Fall River Gas Works Co. (34 N. E. Rep., 523). This was an action against a gas company to recover for the death, by inhaling gas, of an employé of a city water board while in the gas company's cellar for the purpose of reading the water meter, pursuant to his duties. One of the doctors summoned as witnesses in the case testified that the deceased had a period of conscious suffering before death. To be sure, he had not had any experience of this kind of asphyxiation personally or with patients, but his general competency as an expert seems not to have been questioned. Therefore the court declared itself as recited, and said that it could see no sufficient ground for saying that the testimony admitted in the case could be treated as furnishing no evidence of the fact.

The Mineral-water Coöperative Business.—What fortunate men are physicians! All they have to do to make any amount of money—as it seems—is to enter into secret partnership with "enterprising hustlers," who will do all the work except a paltry word of advice to patients, and turn over to the physician most handsome profits. In so doing a man is not selling his professional honor, because the treatment advised is good! This is an extract from a "confidential" (the word slips with a wink and tells the story!) letter to many physicians:

Dear Doctor: I offer you a coöperative interest in —— Water, in the form of tribute to the amount of one dollar per dozen one-half gallons, when the prescriptions come to me direct, and half that sum when the business reaches me through druggists, providing you furnish me each week with the names of patients to whom you have prescribed —— Water, so that they may be credited to your account.

It is apparent from the above, that in this item a physician may find an income equivalent to interest at 6 per cent. on a real estate investment of thirty thousand dollars ($30,000), as —— Water may easily and properly be prescribed to one hundred families, who on the average may consume one and a half dozen per month.

100 at $18.00 = } $1800.00.
$30,000 at 6 per cent. = }

If you are favorable to this proposal, etc., etc.

Watch the Slaughter-houses.—The *Sanitary Inspector* says that one way in which filthy slaughter-houses are probably detrimental to health is this: Fresh meat is very absorbent of foul odors and is quickly tainted in an atmosphere laden with the germs and stenches of putrefaction. Tainted meat often gives rise to dangerous and sometimes fatal poisoning among those who have eaten such food. The whole idea is revolting—eating meat that has been dressed, and perhaps left to cool from six to twenty-four hours in a building which an ordinary person can hardly enter without suspended respiration and gastric insurrection.

So great an evil had these small and unkempt slaughter-houses become in England that a society was formed a few years ago whose object is to call the attention of the public to their dangers and to secure improvements in the arrangement and care of such places. The society, under the presidency of the well-known sanitarian, Dr. B. W. Richardson, has been doing good work in that country, and it would seem that some such effort is needed in this country, where the people are often too forbearing.

Appendicitis in the Negro.—From the correspondence presented in the present issue of THE MEDICAL NEWS it will probably be concluded, that while appendicitis is less frequent and less severe in the black man, he is by no means free from the disease. We have received a number of other communications upon the subject. Dr. E. R. Conson, of Savannah, Ga., writes that he has seen cases of appendicitis in the negro, but that they seem to be less frequent than in whites. He has noticed no difference in size or structure of the appendix vermiformis. Dr. James A. Turner, of Little's Mills, N. C., has seen and treated two cases in the last five years: one recovered without surgical aid, the other recovered after operation. Dr. Charles J. Aldrich, of Cleveland, Ohio, has had three cases, all of which recovered without operation. Besides these cases, Dr. Aldrich made an autopsy of a case in 1882 that was diagnosticated as one of appendicitis, but death was proved to be due to the fact that twelve inches of the ileum had passed through the ileo-cecal valve, whence resulted general peritonitis. We think the discussion may be closed.

Thyroid Therapy for Psoriasis.—Struck by the remarkable improvement observed in the condition of the skin in cases of myxedema treated by the administration of thyroid extract, Dr. Byron Bramwell, of Edinburgh, was led to try the same agent in the treatment of some chronic and obstinate cases of psoriasis, with results that were at once surprising and gratifying, as detailed at the recent meeting of the British Medical Association. A preparation of thyroid gland was the only medicament given, so that the possibility of doubt was practically eliminated. In some cases the subjective improvement was immediate, and was soon followed by objective evidence of improvement. The inflammatory redness of the diseased areas diminished, and there was considerable desquamation. One patient was made worse; in two the treatment was followed by no benefit; and in one case a slight relapse took place. The question at once suggests itself that if this method of treatment prove ultimately successful in psoriasis, why should it not be applicable to other diseases of the skin as well.

Should Doctors Charge Dentists? is a question the medical journals are trying to decide. The boot might be wisely put on the other foot: Should dentists charge doctors? If a dentist is a graduate physician, the "courtesies of the profession" should certainly be accorded each other by both physician and dentist—at least so far as service and advice. Why not just the same if he is not an M.D.? However, it wouldn't be advisable, as has been seriously suggested, to attempt making the doctors' drugs offset the dentists' gold plates and gold fillings. Hardly!

Figure-heads in the Programs of Medical Congresses.—Complaints are multiplying of the reprehensible practice of announcing as contributors to a proposed medical congress all or many of the great names that it would be desirable to have read papers, regardless of the fact that such persons have not proposed to do so, have not accepted invitations, or have even positively declined to contribute. It may show "enterprise," but "enterprise" is often a euphemism for very contemptible practices.

A Little Kindness Desired.—It has come to the knowledge of the Editor of THE MEDICAL NEWS that by reason of old age, illness, etc., a worthy physician is in want. He is struggling bravely against unmerited misfortune and, if he knew of it, would by no means allow such an appeal as this to be made for him. A little financial aid for a worthy member of our guild is needed, and we should be happy to make him happy by the transfer to him of the gifts of his unknown friends.

SELECTIONS.

FANTASTIC THERAPEUTICS.

THE fantastic character of recent therapeutic suggestions will, it is feared, cause a revulsion of feeling in favor of therapeutic nihilism. The science of therapeutics is particularly subject to the fluctuations imposed upon it by the idealism of its votaries. But, as Sir Thomas Browne somewhere observes, "every poison contains its own antidote," and the excesses practised by the insistent therapeutist engender a corresponding skepticism and mistrust, which ultimately save this much-abused science from the oblivion of ridiculousness.

These two traits, this confidence of the believer and the incredulity of the doubter, are admirably exemplified at the present time. On the one hand, it is found that the ideas which have resulted in the concoction of microbic and animal-extract panaceas for every ailment have devastated the reason of the therapeutist. The very reasonable hypothesis that the various glands supply an internal secretion to the blood necessary to its maintenance as a vitalizing medium has been twisted into the baseless fabric of a vision of every organ secreting or manufacturing specific nutritional substances. In harmony with this conception, a system of therapeutics is suggested which smacks of sixteenth century enlightenment; in which extracts of various organs are administered for diseases of homologous parts. On the other hand, we find a distinguished German observer carrying his nihilism to the extreme of contending that all the results of electro-therapeutics are those of suggestion. Between so much faith and so little, where do we stand? Shall we next hear that opium relieves pain and chloroform produces anesthesia by suggestion? or shall we learn that zygomaticin is extremely beneficial in melancholia?

One of the potent causes of this therapeutic befuddlement doubtless arises from the proprietary interest in remedies. The profession is perpetually deluded by those who claim to enlighten it by carefully prepared information of an unreliable kind, regarding the physiologic and clinical action of remedies. This makes it more and more incumbent upon the intelligent physician to limit his prescriptions to the actual materia medica, of which he possesses definite and reliable information.

It would be sad to think that nothing should result from this outrageous idealism in therapeutics. If it be that "the end of dreams is to break them," let them be broken rudely, provided this restore us to a fair degree of therapeutic sanity.—*The Physician and Surgeon*, August, 1893.

THE COMPOSITION OF QUACK-REMEDIES.

Signs are not wanting that the common-sense of a long-cozened British public is beginning to assert itself in the matter of quacks and their practices. For some time past a plucky little paper—*Hygiene*—has been publishing a series of articles with analyses of many popular patent medicines. It is astonishing to note the number of remedies which depend on the homely virtues of aloes, eked out by equally commonplace properties of such substances as treacle, hard soap, and powdered ginger. We may hope that the good seed of knowledge thus sown broadcast by that courageous editor will fructify to some future purpose in the minds of the community. One clear contributory force in the revolution will be the rousing of Englishmen to the way these charlatans have picked their pockets. The trial of the woman Ruppert a week or two since in the Irish courts showed that the poisonous nostrum she vended at half a guinea had a commercial value of about a halfpenny. The disclosure of the latter fact will probably deal a heavier blow at the pernicious system of patent and proprietary medicines than many years of journalistic agitation would be able to effect. Another hopeful sign is that the newspapers generally are beginning to seek for more light on this important subject. It is true that the leading papers, with some few honorable exceptions, have not yet had the courage to exclude the advertisements of proprietary articles, even when proved worthless in open court.—*Medical Press and Circular*, August 30, 1893.

REVIEWS.

Brain-Surgery. By M. Allen Starr, M.D., Ph.D., Professor of Diseases of the Mind and Nervous System, Medical Department of Columbia College. N. Y., etc. With fifty-nine illustrations. Pp. 295. New York: William Wood & Co., 1893.

This is the first distinctively American monograph on this fascinating subject, and pleases the reader not alone on account of its title, but because of the personality of its author. The translated monograph of Bergmann has until recently been the principal source to which students of this subject have referred. It is, however, not so comprehensive nor so suggestive as the one in hand, and it by no means does justice to the work of the American neurologists and surgeons, whereas this work of Dr. Starr is in large measure devoted to the labors of his *confrères* in this field. That he has been a careful student of the subject goes without saying, and that there is very little accessible literature on the subject which has not been referred to will appear from an examination of its pages. A large portion of the book is devoted to trephining for epilepsy and kindred disorders, to which about 130 pages are devoted. The author has studied the matter carefully, and apparently impartially, in the light of the experience of the last few years, and if not enthusiastic in favor of surgery in this condition, justifies this later by comparison of the results which he reports. We are pleased to see him emphasize, on page 27, the fact that when both medical and surgical indications for operation exist, but do not coincide, it is better to follow the medical indication, *i. e.*, it is better to trust to localizing symptoms than to the presence of scars or even depressions over portions of the cortex whose function is not known.

In the section devoted to the pathologic changes observed during operation he has been quite full, and as satisfactory, perhaps, as the subject permits. In speaking of the later results of excision of portions of the brain he quotes Coen, who says: "Should reproduction of brain-tissue fail to occur in the region where brain is destroyed, a connective tissue fills its place which forms a scar in the true sense of the word." In summing up results he aknowledges that in the majority of operated cases there has been a failure to permanently cure by operative interference. When we ask why, the answer must be that the original condition which gave rise to the effect has not been removed. While it is possible to elevate a depressed bone, to remove cysts, and take away the connective tissue, it is useless to simply break up adhesions, because they will always re-form. In this regard he seems to have taken no notice of the recent suggestion to insert gold foil between the dura and the cortex to prevent this very thing. He fears that excision of any portion will always be followed by the formation of a cicatrix, which in turn will act as an irritant. He does not argue that we should, therefore, be deterred from operating, but says, judging from general results which are unfavorable, that we should be inclined not to operate, but must take into consideration that in no case is it possible to predetermine just what or how beneficial the results of an operation may be. Some patients have undoubtedly been cured. It is here, we feel, that he has made an important omission in not referring to the necessity for a long-continued dietetic, hygienic, and drug treatment of these cases after operation, and he nowhere lays stress upon the so-called epileptic habit into which these patients have fallen, and which must be cured by these measures rather than by operation alone. Altogether he favors operation for selected cases.

With trephining or craniotomy for imbecility he deals very fairly, although not quite as fully as he might have done. For instance, he does not state the minimum circumference of the skull which makes a case hopeless for operation. This limit has been fixed by French authority at seventeen inches. And we look in vain through his pages for a description of that condition commonly spoken of as too early synostosis, due usually to rickets, which leaves a fairly normal brain in a condition in which expansion is impossible.

An interesting chapter is devoted to trephining for intra-cranial hemorrhage, which must for the most part be confined to traumatic cases, although success has followed the operation in cases of apoplexy of or near the cortex.

Of abscess of the brain and its operative relief he speaks at some length, and he gives a very compact summary of the symptoms due to abscess following ear-disease, with such directions as are necessary for the operator. Over fifty pages are devoted to the subject of brain tumors, including their symptomatology, with detailed reports of cases of his own. He advises, when brain-tumor is suspected or diagnosticated, if mercury and potassium iodid fail to relieve the patient within three months, or if during that time the symptoms rapidly increase, that operation should not be delayed. In

dealing with cysts he emphasizes the wisdom of removal of the cyst-wall, as otherwise it would probably refill and require further operation.

Due attention is devoted to trephining for hydrocephalus and for relief of intra-cranial pressure, and he appears to rather favor than discourage this operation. For insanity and headache, persistent and severe, the operation is occasionally to be recommended, but it is almost impossible as yet to formulate explicit rules; each case should and must be studied on its merits.

The final chapter is devoted to the operation itself, which is succinctly described and treated at sufficient length. This is, so far as we know, the first attempt by a neurologist to write a surgical treatise, and it has proved a success. In these cases, as well as in many others, the surgeon and neurologist must work hand-in-hand, and it is a pleasure to find a specialist in internal medicine who is quick to perceive the indications for operation, and so competent to judge of what ought to be done, and how. We congratulate the author very warmly upon his excellent work.

A CONTRIBUTION TO THE PATHOLOGY OF THE VERMIFORM APPENDIX. By T. N. KELYNACK, M.D. London: H. K. Lewis, 1893.

THIS volume embodies the results of the writer's evidently careful and extended personal observations upon the pathology of the vermiform appendix, as well as much useful information on the subject culled from the writings and reports of others.

There is probably no subject that has attracted more attention of late years, both from the medical and surgical standpoint, than that of disease of the appendix, and a systematic consideration of its pathology, especially by one who has had the opportunities for observation that Dr. Kelynack has, is a timely and welcome contribution to literature.

After discussing the development and physiology of the appendix, as well as the early references to appendicitis, the variations met with in the length and lumen of the appendix are taken up, and then follows a most interesting chapter on the pericecal peritoneal fossæ. Then in order follow chapters on variations in position, herniæ of the appendix, the histology, cystic dilatation of the appendix, and next its inflammatory affections are taken up. The writer makes some good criticisms on the complicated and uncertain terminology of affections of the cecum and appendix. In classifying the forms of appendicitis he adopts a very simple grouping, making three divisions: 1. Simple Appendicitis; 2. Perforative Appendicitis; and 3. Recurrent Appendicitis. The specific forms—tuberculous, typhoid, and actinomycotic appendicitis—are considered separately.

Upon the question of treatment, Dr. Kelynack's views, based as they are upon such extended observation, seem to us most fair and temperate. As he happily suggests, there is considerable difference of opinion between physicians and surgeons as to treatment in many instances, and the reason for this is obviously, as he points out, the fact that the medical men are likely to base their judgment upon the mild cases, which come under their care, and which recover with medical treatment, while the surgeons' experience is derived from the more severe cases, in which the occurrence of suppuration, or of peritoneal infection, demands operative interference. As the writer says: "Since the adoption of surgical measures may be demanded in what even seems to be a mild form of appendicitis, it is most desirable, if we are to live up to our knowledge of pathologic facts, that there should be free and early coöperation of physician and surgeon."

This book is one which will well repay reading; it contains much that concerns the general practitioner as well as the pathologist or the surgeon. The bibliography, with which the volume concludes, and the extensiveness of which will doubtless surprise not a few readers, will be appreciated by those who have occasion to write upon, or to investigate the literature of, disease of the appendix.

ABNORMAL MAN. (BUREAU OF EDUCATION, CIRCULAR No. 4, 1893.) Being Essays on Education and Crime, and related subjects, with Digests of Literature and a Bibliography. By ARTHUR MACDONALD, Specialist in the Bureau of Education. 8vo, pp. 445. Washington: Government Printing Office, 1893.

THIS report, just issued by the Government, is very valuable as containing the latest statistics and literature in the comparatively new science of criminology.

The author leaves aside all theorizing and devotes himself entirely to the arrangement of investigations and reviews of the latest writings, summarizing them so that the reader can familiarize himself with the best thoughts of the now famous criminal anthropologists of the Italian and French schools. He believes that "to experimental medicine scientific ethics will look for many of its basal facts."

The pathology of society must be studied experimentally, as the pathology of man is studied. Criminal anthropology is very closely connected with psychologic medicine; and one experienced prison-warden believes that the prisons of the future will be in charge of physicians.

Social diseases are intimately connected with physical disease, and the medical man is becoming more and more a factor in the efforts made to cure and prevent them.

To those who are connected with institutions for the defective and criminal classes this report is very essential, containing, as it does, an extensive bibliography of crime, alcoholism and allied habits, insanity, pauperism, and social pathology.

The most important contributions of the past few years are reviewed and a synopsis is given. Criminology, alcoholism, criminal and hypnotic suggestion, insanity and genius, and charitologic and ethical literature are some of the subjects treated in detail.

Just as pestilence and insanity are no longer considered visitations of an angry Divinity, so are crime and pauperism being slowly shifted away from the ideas of inherent depravity and original sin, and are considered diseases for whose existence society is chiefly to blame.

Expiatory punishment is no longer looked upon as the proper treatment.

Prophylaxis is the cry of the modern criminologist, and an asylum for chronic cases one of the methods of carrying it out.

Mr. MacDonald's report should be read by every physician, for his opinion may be sought any day in the discharge of his various duties.

Nursing: its Principles and Practice, for Hospital and Private Use. By Isabel Adams Hampton, Graduate of the New York Training School for Nurses, attached to Bellevue Hospital; Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital, Baltimore, Md.; late Superintendent of Nurses, Illinois Training School for Nurses, Chicago, Ill. Illustrated. Philadelphia: W. B. Saunders. 1893.

This latest nursing-book is well written and very readable, the best parts being those on "Observation of Symptoms" and "Obstetrics."

The remarks on page 58: "An intimate friendship between the head nurse and pupil nurse ought never to exist, if only for the sake of the patients;" and on page 342: "A well-trained nurse is never guilty of attempting a diagnosis of a disease even when invited to do so;" and those on economy on page 65 will, we hope, commend themselves to all.

The first chapter is not, we think, likely to be followed by any training school-head, unless it be one of the author's pupils, each one having her own preferred plan.

In Chapter II, the important duty of cleansing sputa-cups is given to an orderly, and yet in Chapter IX especial precautions are written as to their disinfection from a bacteriologic standpoint.

We cannot agree with the statement on page 55: "Hospital etiquette consists of nothing more than the continual and systematic observance of *every-day* courtesies"—a hospital having a code of its own, like to no other we know of.

The knowledge is distributed somewhat unevenly, nine pages being given to temperature, while two cover croupous pneumonia and one and a half smallpox.

Take it as a whole, the book is a valuable addition to a nurse's library. An excellent glossary is a commendable addition to the work.

The spelling is as rigidly medieval as possible, although at least one opportunity was missed—*perineum* is not spelled *perinæum*. The author, of course, spells *feces*, *fæces*, but why not logically also *defecation*, *defæcation*. In the index *Trommer* is repeatedly spelled *Trömmer*, and throughout the book *albumen* is written instead of *albumin*.

Heath's Practical Anatomy: A Manual of Dissections. Edited by William Anderson, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Thomas' Hospital; Professor of Anatomy at the Royal Academy of Arts; Examiner in Anatomy for the Royal College of Physicians and Surgeons. Eighth edition. 329 illustrations. 8vo, pp. xviii, 744. Philadelphia: P. Blakiston, Son & Co.

Those familiar with text-books upon practical anatomy in general, and with Heath's *Practical Anatomy* in particular, will welcome the eighth edition in its new and reconstructed form. This edition has been subjected to an extensive revision in order to bring it to a level with current teaching and the present requirements of the examination boards.

The original plan of the work has been carefully preserved, but the more recent progress in topographic anatomy, involving, as it does, a greatly increased precision in description, especially in connection with the viscera, has necessitated an almost complete reconstruction of certain sections, and the addition of new matter to the extent of 150 pages, without increasing materially the bulk of the book.

The work of the editor is everywhere visible, without the unsightly and objectionable letter "E," so common in revisions. The reconstruction has been complete, and stamps the distinguished editor as in every way the equal of the celebrated author of this popular work.

In addition to the many valuable additions to the text everywhere throughout the work, the illustrations are particularly striking, clear, and forcible, and add much to the practical value of the book as a working dissector, in which capacity it has been so much employed. The editor has added no less than thirty-four original cuts, besides the large number selected from other recent works for this edition.

The new edition deserves, and no doubt will receive, even more liberal support than the past editions of this popular book have ever enjoyed. There is, however, one change which should be made to bring this work up to date—to have the parts on the illustration lettered and not numbered. This would be an expensive luxury to the publishers, but one which modern ideas demand.

Transactions of the Medical Society of the State of New York for the Year 1893. Published by the Society. Philadelphia: William J. Dornan. 1893.

Among many interesting papers, our attention has been specially attracted by those of Elsner, Einhorn, and Stockton upon "Diagnosis and Treatment of Disorders of the Digestive Tract." Bulkley's report upon "Chancre of the Tonsil" is an important contribution to a subject of perennial interest. "Carcinoma" is another topic that has received careful discussion; and we heartily commend the course taken by the Society to secure adequate presentation of vital topics. Dr. Pilcher's "Presidential Address" and its probable consequences, we have previously discussed.

CORRESPONDENCE.

IMMUNITY TO APPENDICITIS.

To the Editor of The Medical News,

Sir: In your issue of September 2d you quote one of America's foremost surgeons who cannot call to mind or learn of any of his Southern *confrères* who has seen appendicitis in the black man. This statement recalls two other immunities of the black race to which I referred in a letter published in the *Medical Record*, August 27, 1892: the immunity to scarlet fever and that to locomotor ataxia. These three immunities (assuming that the immunity to appendicitis is real) are common to the negroes, as to the Japanese. My own experience has been chiefly with the Japanese. One might be inclined to attribute the existence of these immunities in the Japanese to a fusion of negro blood some 1300

years ago. That such a negroid fusion took place is recognized by all ethnologists. The Eta, the distinctly leprous element, is decidedly a negroid race, of which we are forcibly reminded by some of their features—for instance, their curly hair, their pigmented sclerotic, etc. Baelz even thinks that the outcast Etas are descended from the ancient leper colonies. The isolation of this element, in consequence of its being a prey to leprosy, kept the negro characteristics from vanishing. That leprosy was rampant in that race is but natural, as leprosy is an African disease.

The occurrence of locomotor ataxia has been attributed to syphilis. Gowers has found 90 per cent. of his cases of ataxia to have originated in syphilis. Starting from this proposition, we should conclude that there is no syphilis in Japan, as there is no locomotor ataxia. But quite the reverse is true: the fact is that the race has been rotten with syphilis in the course of thirteen centuries; though the disease, being modified, is now less virulent. As we are not able to connect the immunity to ataxia with syphilis, it is natural, I think, to connect it with the negro characteristics inherited by the Japanese race.

However, I have been in the habit of taking quite a different view from the ethnologic one of the immunity to appendicitis. It seems to me that the diet has very much to do with it; temperance in eating, aseptic hot water (Japanese tea is drunk continually), vegetable diet (Japanese eat rice in enormous quantities, as all the world knows), absence of meat-diet (almost absolute in Japan), with its ptomaïnes and leukomaïnes, may be, after all, the cause, though indirectly, of the absence of appendicitis in Japan. A vegetable diet necessitates a large extent of intestine, and this extraordinary intestinal length belongs to the Japanese. The following passage from one of Dr. Scheube's articles will, I think, be interesting in this connection: "In my 'Remarks on Japanese Diet' I said that very probably the rice is better used up in the intestine of the Japanese than in that of the European, and I expressed a surmise that the Japanese intestine must be the longer of the two. I had before me, at that time, one single measurement, that of the intestine of an adult Japanese. The total length of the intestine amounted, in this sample, to 995.5, of which 183 belonged to the large intestine. The length of the body itself was 156.5.

"Mr. Taguchi, professor of anatomy in the Japanese Section of the Medico-Surgical Academy, in Tokio, has since kindly communicated to me the results of his measurements, both of body and intestine, on the corpses of 26 persons between seventeen and sixty years old. He made use of the Japanese measures, which I have converted into metric figures (1 shaku = 0.303 m.).

"These 26 cases give a length of intestine of 953.7 cm. The maximum was 1203, the minimum 0.667; only three times was the intestine less than 800 cm. in length. Hoffman, in his *Manual of the Anatomy of Man*, states the length of the intestine as from 8 to 9 m. Accordingly, even the absolute length of the intestine is greater in the Japanese than in the European.

"The differences are still more striking if we take into account the size of the body, and if we reduce the intestinal length to 100 cm. of the body-length. Hoffman, from whom I have quoted the foregoing figures as to the length of the intestine, found in men an average size of the body of 167.8 cm. Thus, 8½ m. being admitted to be the average length of the intestine, there are 506.5 to 100 cm. of bodily length. The average length of the body amounted in our 26 Japanese to 156.9,[1] so that to a body-length of 100 cm. corresponds an intestinal length of 607.8 cm. The intestine of the Japanese is one-fifth longer than that of the European. Whether further measurements will confirm these conclusions or not remains to be seen."

I must add here a few words explanatory of the manner in which, to my mind, the effect of the vegetable diet is produced. The vegetable or graniferous diet is gaseous. The gases, inflating the intestine, prevent the impaction of the appendix vermiformis.

But, however it may be explained, the fact remains that those people among us whose fare is the plainest and least concentrated (which is the nearest approach to pure vegetarian diet) are as exempt from appendicitis as any Japanese could be. The disease chooses for its victims only the highly fed, the great meat-eaters, wine-bibbers, and those that keep their blood in that plastic and consequently inflammable state which a meat-diet naturally produces.

Therefore, let anyone who has suffered from a first onslaught of appendicitis betake himself to a diet of hot water (omitting the spirit) and vegetables, and taboo the meat.

Yours truly,

ALBERT S. ASHMEAD, M.D.

NEW YORK.

APPENDICITIS IN THE NEGRO.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of September 2d the question of appendicitis in the negro is presented, with a proposition to record the results of experience in this connection.

It so turns out that a number of cases have been under my care, either directly or in consultation, in which there were well-defined signs of inflammatory action in the right flank of the negro. These cases were in most instances classified as typhlitis; but, with the light we have on the inflammatory troubles in this region, it is very probable that some of them originated in the appendix vermiformis. As they were not subjected to any operation and fortunately recovered without affording an opportunity for a post-mortem examination, there must remain a doubt as to the diagnosis.

There is, however, one case in the person of a negro, in regard to which all doubt was removed by an operation showing the existence of appendicitis. This was a patient of Dr. T. D. Longino, who saw the man first on April 23, 1891. Dr. Longino writes me that the patient complained of his bowels being cramped after drinking a quantity of ice-water. He was given a dose of morphin, which afforded little relief, and in about two hours the physician was called again, finding the man still in pain. The morphin was repeated, and more was left, to be taken during the night. Upon calling again before day, it was found that the patient had suffered all night, and morphin was given hypodermatically. The bowels being distended,

[1] The same figure is also given by A. Weissbach as representing the average size of the Japanese. I found by a large number of measurements a somewhat higher one—158.3 cm.

hot stupes of spirit of turpentine over the abdomen seemed to afford temporary relief during the 24th. Upon seeing the man again on the 25th there was still pain and the temperature had gone up considerably in the meantime. I was called by Dr. Longino on the morning of the 26th and concurred in his opinion that the patient was suffering from appendicitis, requiring operative interference without delay. Dr. W. A. Crewe was invited to examine the patient and fully acquiesced in the propriety of attempting to save life by an operation, though the man was then in a very prostrate condition and the abdomen enormously distended, indicating general peritonitis. In the presence of Dr. Butterfield, of Binghamton, N. Y., who was on a visit to Dr. Longino at the time, and, with the assistance of the colleagues named, I performed the usual operation and found the appendix vermiformis much inflamed and perforated by a fecal concretion. It was ligated near the attachment to the caput coli and excised. After washing out the cavity, I was proceeding to close the wound, when the patient ceased to breathe and died.

A case has been reported to me by a colleague, in the person of a negro woman, who was undergoing an operation for a different disease, in whom it was noted that the apendix was inflamed and contained what was supposed to be fecal concretions. But not thinking it proper to complicate the case by adding to the traumatism by the removal of the appendix, this was returned without interference, and the woman made a good recovery, illustrating that all troubles of the appendix do not require its removal. This observation, however, shows not only the existence of appendicitis in the negro, but also its occurrence in the female.

According to the records accessible to me, there are comparatively few instances of appendicitis among women, and it has not come within my experience to treat a single case in the female.

This observation may lead others to collect statistics bearing upon this point.

Respectfully,

J. McFadden Gaston, M.D.

Atlanta, Ga.

APPENDICITIS IN THE NEGRO.

To the Editor of The Medical News,

Sir: Is the negro subject to appendicitis? Yes. On June 21, 1893, I saw a full-blooded negro, about fifty years old, with undoubted symptoms of appendicitis. I operated on the 28th, and found the appendix perforated and gangrenous. The man died of septicemia about six days after the operation. I have seen only two other cases, both in white persons, however, and in both recovery took place after simply opening an abscess. A fistula remained for six months in one, but closed very soon in the other.

Respectfully, R. M. Hand, M.D.

Shubuta, Miss.

APPENDICITIS IN THE NEGRO.

To the Editor of The Medical News,

Sir: In response to your request, as expressed in your issue of the 2d inst., I will state that I have had two cases of appendicitis in the negro. Both were seen in consultation, and both occurred a number of years ago before we had heard much of operative interference. Both resulted fatally, and in both a post-mortem was secured, verifying the diagnosis. One was in a full-blooded negro, the other in a half-blooded one; the former was aged about thirty, the latter about forty.

I have had an unusually rich experience with appendicitis, and, considering the size of our colored population, if the foregoing cases are all that I have had (and they are all that I can now recall), I should regard the assumption justifiable that the negro is not as subject to this disease as the white man.

Very respectfully,

J. F. Baldwin, M.D.

Columbus, Ohio.

NEWS ITEMS.

The British Medical Association is to hold its next annual meeting at Bristol, under the presidency of Dr. Long Fox.

Dr. Herbert R. Spencer has been appointed Professor of Midwifery and Obstetric Medicine in University College, and Obstetric Physician to the University College Hospital, London, in succession to Dr. John Williams, who has resigned.

Graily Hewitt, for many years Professor of Obstetrics in University College and Obstetric Physician to University College Hospital, London, died recently at the age of sixty-five years. At the time of his death he was Emeritus Professor in the College and Consulting Physician to the Hospital.

The Army Medical School.—By direction of the Secretary of War, upon the recommendation of the Surgeon-General of the Army, the Faculty of the Army Medical School recently established will be made up of Colonel Charles H. Alden, Assistant Surgeon-General, U. S. A., President of the Faculty, and Lecturer on the Duties of Medical Officers; Lieutenant-Colonel William H. Forwood, Deputy Surgeon-General, U. S. A., Professor of Military Surgery; Major John S. Billings, Surgeon, U. S. A., Professor of Military Hygiene; Major Charles Smart, Surgeon, U. S. A., Professor of Military Medicine and Director of the Chemical Laboratory; Captain Walter Reed, Assistant Surgeon, U. S. A., Professor of Clinical and Sanitary Microscopy and Director of the Pathological Laboratory; and Captain Julian M. Cabell, Assistant Surgeon, U. S. A., Assistant to the Professor of Military Surgery and Instructor in Hospital Corps Drill.

The course of instruction will cover a period of four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the first day of November. It will include lectures on and practical instruction in: 1. The duties of medical officers in war and peace. 2. Military surgery, the care of the wounded in time of war, and hospital administration. 3. Military hygiene. 4. Military medicine. 5. Microscopy, sanitary and clinical; pathologic histology, bacteriology and urinology. 6. Hospital Corps drill, and first aid to wounded.

By permission of the Surgeon-General, medical officers of the Army who desire to avail themselves of the course of instruction, and who are stationed in or near the city of Washington or who have a leave of absence which

enables them to attend the course, may be admitted as pupils under the same regulations as apply to recently "approved candidates for admission to the Medical Corps of the Army."

At the termination of the course of instruction the "approved candidates for admission to the Medical Corps of the Army" will be examined by the several professors, and their relative proficiency in each branch will be reported by the president of the faculty to the Secretary of War through the Surgeon-General of the Army.

Regulations.—1. The president of the faculty will be responsible for the discipline of the school.

2. The junior professor will act as secretary and will be responsible for all property pertaining to the school.

3. A faculty meeting will be held in the office of the Secretary on the first Monday of each month from October to March, inclusive, and whenever called by the president of the faculty or the Surgeon-General of the Army.

4. Resolutions adopted by the faculty relating to the course of instruction, the purchase of books and instruments, etc., will be submitted to the Surgeon-General of the Army for his approval.

5. The president of the faculty will submit to the Surgeon-General of the Army, on or before the first day of April of each year, a detailed report of the condition of the Army Medical School, including an account of the instruction given, and the proficiency of the several pupils, as shown by an examination made by each professor at the termination of his course.

6. The hours of instruction will be from 9 to 12 A.M., and from 1 to 4 P.M., daily, from November 1st to February 28th, inclusive, with the exception of Saturdays, Sundays, legal holidays, and the week commencing December 25th.

7. Pupils will be required to be present during the hours designated, unless specially excused by the president of the faculty or by orders from the War Department.

8. When necessarily absent on account of sickness or other emergency, pupils will, as soon as practicable, send a witten statement to the secretary of the faculty, explaining the reason for such absence.

9. The laboratories and library of the Army Medical School will be open for the use of pupils during the hours of instruction designated.

10. Pupils will be held strictly accountable for all instruments and apparatus issued to them for their personal use during the course of instruction, and for any loss or injury to books or apparatus belonging to the Army Medical School, when such loss or injury is due to carelessness or neglect.

11. Pupils in the Army Medical School, during the hours of instruction, will wear the undress uniform of the grade to which they belong, except when engaged in laboratory work, when a black cambric laboratory gown may be worn.

Books and Pamphlets Received.

Treasury Department. Laws and Regulations for the Maritime Quarantines of the United States. Washington: Government Printing Office, 1893.

Thirty-second Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Fiscal Year ending December 31, 1892. Frank W. Hendley, M.D., Supt. Cincinnati: The Commercial Gazette Job Print, 1893.

Fonctionnement de la Maison d'Accouchements Baudelocque. Clinique de la Faculté, dirigée par le Professeur Adolphe Pinard, 1892. Dr. G. Lepage. Paris: G. Steinheil, Éditeur, 1893.

Something More on the Pathology and Treatment of Hemorrhoids, Fissures, Fistulas, and Ulcers in the Ano-rectal Region, with a few Notes on Prolapsus Ani and Neoplasm. By Thomas H. Manley, M.D. Reprinted from the Medical Brief, 1892.

The Value of Javal's Ophthalmometer for the Correction of Astigmatism where Marked Amblyopia is Present. By A. Britton Deynard, M.D. Reprinted from the Post-graduate, 1892.

Index-Catalogue of the Library of the Surgeon-General's Office United States Army. Vol. XIII. Washington: Government Printing Office. 1892.

Moullin's Treatise on Surgery. Second American edition. Revised and edited by John B. Hamilton, M.D., LL.D. Philadelphia: P. Blakiston, Son & Co., 1893.

The Radical Cure of Aural Polypi. By S. Macuen Smith, M.D. Reprinted from Annals of Ophthalmology and Otology, vol. ii, No. 2, 1893.

Points of Similarity Between Us and Homeopathic Physicians. By John B. Roberts, A.M., M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

On Early Laparotomy in Appendicitis, with Report of Cases. By John E. Walsh, M.D. Reprinted from the Denver Medical Times, 1893.

Double Congenital Dislocation of the Lens. By Geo. Friebis, M.D. Reprinted from the Transactions of the Ophthalmological Section of the American Medical Association, 1892.

Lithemia. By P. Max Foshay, M S., M.D. Reprinted from the Cleveland Medical Gazette, 1893.

Rules of the Philadelphia Dispensary for the Medical Relief of the Poor, Instituted April 12, 1786, with the Annual Report for 1892, and a List of Contributors, Managers, and Officers for 1893. Philadelphia: Franklin Printing Co., 1893.

A Plan to Procure Cows' Milk Designed for Clinical Purposes. By Henry L. Coit, M.D. Pamphlet. Newark: L. J. Hardham, Printer and Binder, 1893.

A Board of Medical Examiners: The State's Medical Duty. By Luther B. Grandy, M.D. Reprinted from the Atlanta Medical and Surgical Journal, 1893.

Transactions of the John Guitéras Medical Society of Undergraduates, University of Pennsylvania, 1891–92. Philadelphia: University of Pennsylvania Press, 1893.

New York State Reformatory at Elmira; Seventeenth Yearbook, Containing the Annual Report of the Board of Managers for the Year ending September 30, 1892. Transmitted to the Legislature, January, 1893.

A Handbook of Local Therapeutics. General Surgery, by Richard H. Harte, M.D. Diseases of the Skin, by Arthur Van Harlingen, M.D. Diseases of the Ear and Air passages, by Harrison Allen, M.D. Diseases of the Eye by George C. Harlan, M.D. Edited by Harrison Allen, M.D. Philadelphia: P. Blakiston, Son & Co., 1893.

Bulletin of the Psychological Section of the Medico-Legal Society. Published quarterly by Clark Bell, Esq. New York, March, 1893.

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ORIGINAL ARTICLES.

THE PRINCIPLES OF IMMUNITY AND CURE IN THE INFECTIOUS DISEASES.

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(Continued from page 400.)

THERE are three reasons (only one of which has heretofore been recognized) why the germicidal properties of blood-serum are greater than those of blood-plasma. These are: 1. The lessened amount in the serum of those substances that favor bacterial growth. 2. The concentration in the soluble nucleins that occurs as a result of clotting of the blood. And 3. The passage of the substance of the multinuclear cells into solution.

When I speak of the solution of the substance of the multinuclear cells I do not wish to commit myself to the theory that the entire cell breaks down. I refer simply to the fact—and I believe it to be a fact, as I have found nuclein in solution in blood-serum—that the nuclein passes from the cell into solution. Whether this process is due to the breaking down of the cell or to an active secretion on the part of the cell, I am as yet unable to determine.

As is claimed by Metschnikoff, there are obvious advantages to the animal in having the germicidal constituents of its blood (partly) in the form of ameboid bodies. Concentration at a desired place can be more easily accomplished, and the walls of the arteries and other tissues may be traversed without injury. But these cells do not eat and digest the invading bacteria. There are reasons for believing that they have no power to retard the progress of the invading bacteria until the constituents of the cells pass into solution. Germs often grow and multiply in these cells.

The fact mentioned by Metschnikoff as a proof of his theory that in the apyretic stage of relapsing fever all of the spirilla are found in the splenic cells, while in the pyretic stage they are free in the blood, is capable of a wholly different explanation from that which he attributes to it. It seems to me more likely that the spirilla seek the interior of these cells as a place of rest, where they reproduce themselves, and from which they go forth with renewed energy. In the monkey the splenic cells fail to afford this protection, and the pyretic stage does not return. Metschnikoff himself states that the malarial hematozoön, during the ameboid stage of its existence, finds its way into the corpuscle, and from the substance of this the parasite takes its nourishment.

The action of the soluble or alkaline nucleins on germs may be either inhibiting or directly toxic, or both. It is not necessary that the invading germ be killed in order to prevent its producing disease. If its growth and multiplication be inhibited the disease will not follow. Metschnikoff has shown that some of the germs taken even after many days from the local abscess formed in an immune animal inoculated with a pathogenic germ, and injected into a susceptible animal, may cause the disease. These nucleins are not only germicidal; they are also toxicidal. They render inert the bacterial nuclein, whether this be present in living or dead cells, whether it be in suspension or in solution.

In order to state my views upon immunity in a condensed form, and to bring this address within the limits of the time allowed, I will summarize as follows:

There must be three factors in the production of immunity in an animal naturally susceptible. First there must be an inciting or immunizing substance introduced into the body. We are acquainted in a rough manner with the nature of some of these substances, such as the venom of the snake, the vegetable proteids, abrin, ricin and robin, and certain bacterial proteids. I call these proteids, and I wish it to be understood that I do so tentatively, and that I recognize the fact that the exact chemical nature of none of them is known; but for the present we may call them proteids. For reasons already given, I believe that these proteids, which induce immunity, belong to the class of nucleins. I am aware of the fact that physiologic chemists do not always classify the nucleins among the proteids, but among the albuminoid bodies. These substances, be they nucleins, proteids, or albuminoids, have the property, when introduced into the bodies of certain animals, in certain amounts and under certain conditions, of so stimulating the activity of certain organs in the animal that these organs produce and supply to the blood an antidote to the substance introduced.

Secondly, the organs whose activity is stimulated by these immunizing agents are those, such as the spleen, thyroid gland, and bone-marrow, which manufacture nucleins.

Thirdly, the antidotal substance is a nuclein. The kind and amount of nuclein formed will depend upon the nature of the inciting agent and the condition of the organ or organs acted upon.

I use the word "nuclein" in a broad sense, including the true nucleins, nucleinic acids, and nucleo-albumins. By the term "nuclein" I mean that part of the cell which under normal conditions is endowed with the capability of growth and reproduction, which assimilates other proteids and endows these assimilated substances with its own properties. It is that part of the cell which gives it its individuality. Whether these nucleins, while in solution and devoid of morphologic unity, are still capable of assimilating allied bodies or not, cannot at present be positively determined. There is no *a priori* reason, so far as I know, for denying this. These different nucleins, that of the bacterial cell, and that of the blood, may be isomeric bodies, one of which may be designated as the α-compound, and the other as the β-compound, and one of these by simply causing a rearrangement in the atoms within the molecule of the other may assimilate the second. There are some good reasons for believing that certain proteid bodies contain a cyanogen-group, and Kossel has shown that nuclein contains a basis-substance, adenin, which has the formula $C_5H_5N_5$ and is a polymer of hydrocyanic acid, and Gautier has synthesized another constituent of nuclein, xanthin, by simply heating hydrocyanic acid in a sealed tube in contact with water and a little acetic acid. Indeed, the readiness with which cyanogen-bodies polymerize is well known to chemists. Thus, liquid chlorid of cyanogen C N Cl converts itself spontaneously, under certain conditions, into solid chlorid of cyanogen, $C_3N_3Cl_3$; cyanic acid into cyilid; methyl cyanic ether, C O N (CH_3) into methyl cyamin ether, $C_3O_3N_3(CH_3)_3$, and cyanogen into paracyanogen.

I do not mean to say that the process by which a nuclein assimilates another proteid is as simple as would be indicated by these examples, but they may suggest something of the nature of the chemistry of assimilation. We may suppose that when an alpha-nuclein and a beta-nuclein are brought together, one will assimilate the other; and which one will absorb the other will depend upon the relative strength or vitality possessed by them, and in measuring this strength several things must be taken into consideration. A vaccine has less of this power of assimilation than a germ of full virulence, and a nuclein in a sterilized culture less than either of the others.

An organ that has once been stimulated by a given excitant responds more quickly the second time to the same excitant, provided that the interval of time is not too great. This explains the gradual loss of acquired immunity.

Again, an organ that is stimulated by one excitant may not be responsive to another, and this accounts for the fact that an animal rendered immune to one disease remains susceptible to another.

The poison that is introduced is destroyed by the activity of certain cells. In order, however, to accomplish this destruction, it is probably not necessary that the poison should come in contact with the cells. For instance, the activity of the spleen has been found necessary, as the experiments of Tizzoni and Cattani have shown, to the production of immunity to tetanus. We can suppose that the process of immunizing an animal proceeds in something like the following manner: The modified virus of tetanus is introduced into some distant part, in some unknown way; the spleen is stimulated to action, and secretes a nuclein which is carried partly in solution, partly in the form of multinuclear cells, to the invaded part of the body, and the tetanus-poison is converted into the nuclein coming in contact with it, or is otherwise rendered inert. Later a larger quantity of the tetanus-poison is introduced, and now the spleen acts more promptly and energetically than before. This promptness and energy of action are increased by exercise, and finally an amount of tetanus-culture, of full virulence sufficient to kill an animal whose spleen has not been subjected to this training, may be introduced without ill effect. On this theory the production of immunity consists in a special education of certain cells, and artificial immunity becomes essentially cellular.

The difference between immunity and tolerance I conceive to be this: In the former the cells of certain organs become aggressive; a special function is developed; the poison introduced is destroyed. In tolerance, there is no aggressive action on the part of any organ; there is no development of special functions; the poison introduced is not destroyed; it only fails to kill.

Now, what can be said about the relation between the principles of immunity and those of cure? Are they the same? I think that there are essential differences. In the first place, the substances with which immunity is induced are not applicable in the production of a cure. They are already in the body, and have failed to stimulate the nuclein-forming cells in such a manner as to cause their own destruction. To introduce more of the bacterial poison after the invading virus has established itself in the system will only strengthen the invader. No disease, after being well developed, has been cured by the administration of the bacterial poison. I believe that vaccination, first performed after exposure to smallpox, may altogether prevent the development of the disease, or may modify it, but this is not cure. Of what service would vaccination

be when the body is already covered with smallpox-pustules?

Some experimenters have found that if a certain substance be introduced into the animal simultaneously with, or a few minutes, or at most a few hours, after the introduction of the virulent germ, the disease either does not appear, or it appears later than it does in control-animals, and they have claimed that these are instances of cure. Thus, Behring speaks of *curing* diphtheria in guinea-pigs with iodin trichlorid. He injected this "curative agent" immediately after inoculation, and at the place of inoculation, and found that, of the animals thus treated, some, although they sickened, did not die. He may have induced immunity in this way by the action of the chemical agent on the bacterial proteid, though this has been experimentally denied by Tizzoni and Cattani, but certainly such results do not deserve to be designated as cures.

Koch attempted to cure tuberculosis by introducing the proteid of the specific bacillus into patients. Theoretically this was a mistake, because this proteid in living, virulent form, is already present in the patient, and, indeed, is the cause of the disease. Immunity to tuberculosis has been tested by Nature in each tuberculous person, and has been found wanting. Some step in the process has failed. Either the poison was first introduced into the body in a form too virulent to be resisted, or the cells of the body have been unable to act with normal energy.

If I am right concerning this difference between the agents of immunity and cure, to what source shall we look for curative substances in the infectious diseases? Either we must introduce into the body some germicide formed by other cells, or we must employ other agencies for the purpose of stimulating the nuclein-forming cells. Blood-serum therapy offers the first of these alternatives, and now that we know that the germicidal constituent of the blood is a nuclein, blood-serum therapy will give place to nuclein-therapy, and with the latter there is more hope of accomplishing good results, because it reduces the size of the dose.

I say that the germicides from which we now hope for good results in treatment must be of cellular origin. The experience of the medical profession for the past twenty years has demonstrated that there is no known chemical substance which can be introduced into the animal body in sufficient quantity to effect a cure by its germicidal action without harm. Time after time the discovery of a non-poisonous, powerful germicide has been announced, but experience has invariably shown either that the substance is poisonous or that it is not germicidal. This universal experience of the profession has been scientifically demonstrated to be a fact by the researches of Behring, who after a large number of experiments came to the conclusion that, computed on the body-weight of the animal, antiseptic substances reach a fatal dose when injected in absorbable form under the skin in one-sixth the amount which is necessary to prevent the development of the anthrax-bacillus in the blood-serum.

Now that we have learned that the animal body itself generates a germicide more powerful in its action than corrosive sublimate, and since we know how to increase the amount of this substance in the blood, and can isolate it, and inject it into other animals, renewed hope comes to us.

I have stated that one advantage which nuclein-therapy will have over blood-serum therapy is to be found in the fact that it may enable us to employ the active substance in larger doses. We have seen all along that quantity as well as quality must be taken into consideration in the production of both immunity and cure, and that the effects are in proportion to the quantity. Even the ultra-bacteriologist does not now claim that a single bacillus of the most virulent kind introduced into the most susceptible animal will cause disease. The animal body is no longer to be regarded as a mere culture-flask, in which germs grow without meeting with the slightest resistance; and after the germs of tuberculosis have gained the ascendancy, and are multiplying by the millions daily, possibly hourly, we need not hope to find a tuberculin which in doses of the fraction of a milligram will, within a few days, or within any period of time, destroy this great mass of living, growing poison. The miraculous effects of small doses need not be looked for. These will have no place in the therapy of the infectious diseases.

If it be possible to kill the germs or destroy the bacterial poison after the development of an infectious disease by the introduction of a germicide or a toxicide formed by other cells than those of the infected person, then we may expect that cures for diseases of this kind will be found in the near future. Experimentation offers the only means of ascertaining whether or not this be possible. The recently reported cases of tetanus successfully treated with the antitoxin of Tizzoni and Cattani, obtained from the blood of animals which have been rendered immune to this disease, are in accord with this principle.

If nuclein-therapy fails us, we must strive to find agents that will stimulate the nuclein-forming glands. This probably is the chief factor in the climatic treatment of tuberculosis, but so far as our knowledge of medicinal substances that will accomplish this result goes, we are practically and wholly ignorant. The field of special cellular therapeutics lies before us a *terra incognita*. Im-

portant discoveries in this direction are not likely to be made soon.

I have used the word "cure," limiting its meaning to the destruction of the germs or other poison. If we could destroy all of the bacilli in the body of a tuberculous patient, would a cure be effected? If we ever reach this desideratum, Nature will probably do the rest.

I have thus imperfectly placed before you certain ideas that have for some years been slowly formulating in my mind. They have enabled me to demonstrate, first, that the nucleins are powerful germicides, and, secondly, that the germicidal constituent of blood-serum is a nuclein. Whether or not they will lead to further elucidation of the perplexing problems of immunity and cure I cannot predict.

EXOPHORIA CURABLE WITHOUT OPERATION.[1]

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AT the meeting of the Ophthalmic Section of the Pan-American Medical Congress, recently held in Washington, I said in the course of the discussion on Muscular Errors that operative measures for insufficiency seemed to me a very unphysiologic procedure; a hasty renunciation of distinctively medical or natural attempts at cure; without analogy in the treatment of similar incoördinations elsewhere in the body; requiring an impossible delicacy of execution; without definite prognosis; and very often utterly unsatisfactory as to results. Without offering anything to take the place of tenotomy, to which the whole ophthalmologic world seems committed, the statement may have appeared to some as absurd, and in the extemporaneous word then only permissible, I fear the plan of treatment I suggested was not clear to the members present. I have received so many inquiries as to the method that, although most of my cases are recent ones, I shall endeavor to make the matter plain by a few details and illustrative instances.

I now wish to go so far as to state that my experience shows that every case of exophoria (and possibly of divergent strabismus) is certainly and quickly curable by a rational and common method of ocular gymnastics—*of a certain kind, however, mark well!*—and absolutely without operation.

Let me first premise a few general statements that must have been apparent to candid investigators. The first is the absurdity of cutting a relatively strong, but in reality not over-strong muscle, in order to give its weak counteracting muscle more strength relatively, or what amounts to the same thing, more "purchase." This ridiculous procedure rests upon the more ridiculous assumption that the cause of the incoördination lies in the muscles alone, a fact that no one has sought to prove. And even if the assumption were admitted, it would not follow that tenotomy is the proper method of cure. A hundred facts must crowd to the attention of every careful oculist, going to show that, at least primarily, the fault cannot lie wholly, or chiefly, and generally not at all, with the length, strength, or weakness of the muscles, *quâ* muscles, but that it is largely, if not entirely, dependent upon innervation and innervational coördination. I need not repeat many evident reasons for this fact, but here are one or two. By prisms, for example, bases out, test the full power of weak internal recti "muscles" to adduct at twenty feet. Make these "muscles" exert every grain of power they possess, lifting the heaviest weight possible. Let us say they can only overcome 12°. Now put on, instead of 12° prisms (total), twice 12°, and fix the patient's gaze on an object twelve inches distant, then slowly carry the object away, while the gaze is riveted on the object, and in one minute or less you have carried the object twenty feet away, and without resultant diplopia. If one can only by the extremest exertion lift with one hand a dead weight of two hundred pounds, can one in half a minute lift four hundred pounds, by lifting it slowly, or by any method comparable to the foregoing method of ocular lifting?

Another proof is this: Fix the patient's gaze on a near object, and by extreme convergence put the supposably "weak muscles" on an extreme strain; then, while keeping up extreme convergence, and without movement of the head, move the object on which attention is fixed to one side of the field of vision. One of the "weak muscles" now doubles or trebles its contracting power—an absurdity according to the theory of muscle-weakness.

Take only one other example, an actual case: A patient with 18° of esophoria has both interni cut completely off—no "guarded" or "graded" tenotomy, but the tendon and adjacent tenon-fibers cut clean off—reducing the former high esophoria to a temporary exophoria. In ten days he has his original 18° of esophoria back again!

By their failures to get permanency and desired accuracy of result, or by many other such considerations as I have suggested, careful and conscientious ophthalmic surgeons should have been convinced that invariable tenotomy as a cure for heterophoria is a dismal failure. A few striking successes (readily explainable as due to changed innervation following tenotomy, or to the curative action of operations

[1] Because it conduces to clearness; because the majority of troublesome heterophorias are exophorias; and finally, because, though applicable to all kinds of heterophoria, the method requires some modifications in its special application to other varieties, I limit this article to a consideration of exophoria alone.

per se, or to mental effect, pure and simple) do not neutralize the many wretched failures, and do not establish the procedure on any philosophic or physiologic basis. And this is because the central innervational nature of the entire abnormality is overlooked.

In any myopathy that leaves the flexors of a part, say the arm or leg, relatively weak, do we cut the extensors? With a functionally weakened, paretic, or undeveloped leg, do we maim the opposite leg to bring both into coördination? Do not physiology, medicine proper, common sense even, counsel the development of a weak antagonist rather than the crippling of the stronger fellow?

I frankly confess that these and many other like considerations tormented me in former days, when I was blundering with doubts and authorities, and perplexed and tormented by every case of heterophoria—an ass between two or three bundles of poor hay, doubtful whether to choose the suspicious bundle labelled, *Prisms to be used as permanent crutches*, or that thorny, much-praised bunch, *Graduated Tenotomies—Look out!* or, finally, that malicious bundle ticketed, *For some other Fellow!* Prisms, correcting the insufficiency, to be worn all the time, are a sorry delusion. Temporarily they give relief, but in a little while the patient returns with the weakness of the "muscle" doubled, and successive pilings of prismatic Pelions on nasal ossa grow ludicrously disgusting to patient and to doctor. To proceed with tenotomies, graduate, undergradute, or post-graduate, is a good way to make money—so long as the patient will return for new operations and will pay—but unless one is determined to become a professional tenotomist conscience wearies with the load it must stagger under, and soon cries, Enough!

One ray of hope came to me in these dark days; but everybody did protest so loudly that ocular gymnastics was an utterly useless proceeding that I came near flinging it aside. That it was so rational and physiologic, so in conformity with all the laws of hygiene and health, is probably why I did not throw the suggestion away untried. As every success depends upon the method of carrying out treatment, quite as much as upon the means of treatment, I thought in this fact might be found the cause of failure in ocular gymnastics. A very little practice and observation have shown this to be true. To those who with more vanity than virtue always cry, *This is all an old story; nothing new about that!* I have nothing to say. There is nothing new about life or jealousy, but there are many new methods of making them practical and effective.[1]

It should be understood that a large number of cases of heterophoria are due to anemia, kidney-disease or cord-disease, tuberculosis, syphilis, or some other systemic or cerebral disease. To potter about the local symptoms of a general disease and not strike at the fundamental cause is professional incompetence, and worse.

Then, again, another large number of these abnormalities are directly caused by ametropia, and directly cured by curing the ametropia. The tenotomomaniac is wofully likely to ignore this highly important truth. Moreover, when an insufficiency is not progressive, and produces no troublesome reflexes, it is best left alone. But when one has a permanent heterophoria on his hands, not dependent upon ametropia or disease otherwheres, and a heterophoria that produces reflex symptoms—then he may and must go to work with the local condition.

In a word my plan consists especially in carrying the loaded or weighted stimulus of convergence slowly beyond near-range vision, or, in other words, carrying the weighted convergence-stimulus from the *punctum proximum* to the *punctum remotum*, and by repetitive gymnastics fixing it there. Half-jokingly I gave this equation to a student:

$$\text{Exophoria} + \text{C.-s.}^{\,weighted} + (p.\,p. \times p.\,r.) = \text{Orthophoria.}$$

This, of course, requires an explanation.

In near-range binocular vision, there is an extra power of innervation of the muscles gained by the stimulus of the presence of an object at the *punctum proximum* that at least temporarily enables the visual axes to meet more accurately and certainly upon the object. In exophoria this extra innervation may now be loaded or weighted by prisms, bases out, and by slowly and steadily withdrawing the object, one, two, three—twenty feet (the patient's gaze kept intensely fixed upon the receding object), the innervation of the weaker function is stimulated and increased without diplopia or relaxation of the muscular grip. This is what I mean by carrying the convergence-stimulus into the distance, or *p. p.* multiplied by *p. r.* Let me illustrate: A patient is before us in whom we have determined a power of adduction (at twenty feet) of only 10° instead of the 30° or 35° he should have, an abduction of 6° or 8°, and a manifest (twenty feet) exophoria of 6° or 8.° Put in the

[1] I have heard of a method as having been used by somebody, consisting in giving the patient single prisms to hold by the hand, and thus train the muscles to overcome stronger prisms. This would appear to me dangerous and ineffective. It is impossible for the most careful patient to hold such lenses accurately in place. The prisms must be put in "fronts" or spectacles, "divided," and their strength, method and length of application, accurately watched by the surgeon. I have had no time to examine the literature, if any exists. Mr. Funnyman will do this, doubtless, for me, and kindly inform the world how old the method is he never heard of or used before; but Berry, de Schweinitz, Fuchs, and Norris and Oliver, the latest books out, allude to no method of gymnastics in insufficiency, and least of all, none by carrying the weighted convergence-stimulus into the distance.

trial or spectacle frame, 10° prisms, each eye, bases out, and let the patient firmly fix upon a small, bright object or 20/40 test-letter, held at a distance of twelve inches from his eyes. Slowly recede, the patient keeping his gaze riveted on the object. If diplopia arise, return quickly to the patient and repeat. In normally healthy, young, or young adult persons, one will, usually, at once be able to carry the object twenty feet away without producing diplopia. Two or three repetitions of this will enable the patient in a minute or two to look all about the room without double vision.

The reaction (or strength of prism overcome without diplopia) varies according to the amount of the exophoria, and according to the hundred varying conditions of nervous vitality, length of duration of reflexes, idiosyncrasies, etc. In nearly every patient in whose case I have employed the method I have been able to double the power of adduction in five minutes, and often to reduce the manifest insufficiency proportionately. If the reaction is low, the defect high, the vitality asthenic, I then order prisms in "fronts," and instruct the patient how to carry on the gymnastic exercises carefully and intelligently at home, and to return at least once a week. If the reaction and vitality are high and the heterophoria low, a few daily visits, with exercise under my direction, soon reëstablish "muscular" balance and the normal relation between adduction and abduction.

I use the simple rod-test or prism-test at twenty feet to determine the measure of manifest insufficiency. This is accurate enough for all practical purposes, especially as this is not the chief test. It is the adduction-test that is important, and the determination of the relation between adduction and abduction. All tests and records are made at twenty feet. "Convergence-stimulus adduction" means the adducting power at twenty feet, after exercise, by carrying the weighted or loaded converging power from the near to the distant point. To test adduction and abduction I have had a simple "battery" of prisms made, running from ½° to 30°, arranged in progressive succession, each ⅝ in. by 1¼ in., bases laterad, the whole about a foot long—a device that greatly facilitates speed. The measurements of adduction, of abduction, and of manifest heterophoria are the first to be made, and to be daily retested, until normality is established. A proportion between adduction and abduction, of about 4 or 5 to 1, and an esophoria at twenty feet of from ½° to 4° or even 5°, I call normality.

Deficient adducting power is the source of trouble and the thing to cure. It is a remarkable fact, and one that often occurs, that we may have normality or balance of the muscles at twenty feet, together with a highly subnormal adducting power. I think this is the reason of failure sometimes to cure a case of asthenopia. No manifest or even latent heterophoria existing, the adduction-test is not made. But it is precisely this test that tells of the hidden weakness and cause of all of the trouble.

The essence of the treatment is to arouse innervation by the weighted convergence-stimulus carried into the distance, and to make the effect permanent by short periods of gymnastics. The length of each exercise-period depends on the peculiarities of the case. From five to ten minutes, I think about long enough, repeated several times a day. If given at the physician's office, several five-minute periods may be advised, with intermissions, and the strengths of the prisms varied with the reactions of the innervation. The patient should read a little each time, and be taught to carry the gaze slowly from near to distant objects, without diplopia, etc. When carrying the object away from the prism-handicapped convergence the patient must be taught and constantly warned to look intensely, and with riveted attention at the object. If diplopia supervene, and the patient cannot overcome it by strong-willed fixation, we must come back within the range of binocular fixation and repeat the recession. If still the grip slips, we have at first weighted the weaker function too much and must temporarily reduce the load. But in all cases there is a steady rise of the innervational centers to meet the demand, and I have in healthy people never failed to double and sometimes to treble subnormal adduction within two, three, or at the most five minutes. At the next period of exercise this gain has only in part been lost, and in the beginning of the treatment the gain in adducting power at succeeding visits is "by leaps and bounds."

The question arises as to the attainment of permanent or continual normality, and the ability to discontinue the method. Every case varies. A few days of "treatment" suffice in low degrees of defect, and with good health and nervous vitality, to bring about normal coördination and adduction. In the more chronic cases, or in those of high degrees of heterophoria, or again in those with subnormal vitality, the return to normal balance is slower, some requiring a week or two, others a month or two. But in every case, even the worst, there has been relief or improvement, and progressive approach to balance.

A highly important point is intelligent, accurate judgment in loading the convergence-stimulus. Success will depend upon precision in the amount employed. But response to surprisingly heavy loads is remarkable, and increase of the load is allowable with astonishing rapidity, while one established grade of strength must be quickly followed by an increase

of the load. Of course, one can go *too* fast and *too* far, although I have never had a patient complain of pain or even discomfort from the severest and most long-continued gymnastics. All this again illustrates the nervous origin, rather than the mechanically muscular origin of these defects.

As to the durability and perpetuation of once-gained normality, I have been delighted to find how steadily it is maintained. Nature may often be unable to rid herself of a vicious habit or abnormalism of function, but after one little wise "lift" from the physician's hand, with a word of thanks and a good-bye, she is off, and thereafter she will keep things straight herself. There is, indeed, a difficulty in getting patients to keep up the treatment long enough to reinstate complete orthophoria. They get relief before this is entirely re-established, and see no reason for continuance. I have had no relapses so far, although I frankly confess that my oldest cases cured by this method have been only a few months out of my hands. Their reflex symptoms, however, disappeared before the return of muscular coördination, and subsequent retestings show no tendency to revert to the old disorder.

All of my cases had previously not been subjected to tenotomy. I hardly doubt that such a surgical history, if present, would make recovery by this or any other medical treatment more difficult, if not impossible. Just as surgical help is excellent beyond all things when it is needed, so when hygiene and rational therapeutics are alone required then surgical meddlesomeness and impertinence are most pernicious.

I append brief epitomizations of a few typical cases out of many that have been treated or that are still under observation:

Case I.—Miss H., fifteen years of age, had much headache, despite correction of the ametropia and of the internal insufficiency by prisms, bases in. There was from 2° to 4° of exophoria, with adduction 22° and abduction 6°. Prisms, 10° each eye, were ordered and in ten days there was an esophoria of 2°, an adducting power of 32°, with ability to read as desired and no headache. The exercises were discontinued.

Case II.—Mr. V., twenty-five years of age, had a vacillating exophoria, varying from 4° to 8°, and an adducting power of 18°. The adducting power increased steadily to 33° under gymnastic exercises with prisms, but the manifest exophoria showed no sign of lessening for two months. Finally, on September 23d, two and one-half months after beginning the treatment, muscular balance was reëstablished; adduction was 35°, and all headaches had entirely disappeared.

Case III.—Mr. S., twenty years old, had received little benefit at my hands from glasses and prisms during a year previous to May 6, 1893, at which date my notes say there was exophoria 8° and adduction 12°. Gymnastics with six-degree prisms each eye, bases out, gave him on July 6th an adducting power of 23°. The exophoria still remained the same, but all pain had disappeared. I now ordered prisms, 10° each eye. On August 27th he overcame 35° prisms, total, bases out, but his insufficiency still remained about as high as before beginning the exercises. There was entire freedom of all previous ocular and cerebral distress. The gymnastic exercises were continued, and on September 30th I found muscular balance and a steady adducting power of from 30° to 35°. The patient was discharged happy.

Case IV.—Miss S., twenty years of age, had on August 12, 1893, an exophoria of 12°, adduction 6°, abduction about 10°. Prisms, 8° each eye, were ordered, and in three weeks there was a desired but astonishing esophoria of 2°, and an adducting power of 28°, with much relief from headaches, etc. On September 1st the manifest esophoria was 3°, adduction 30°, with entire disappearance of headaches. Gymnastics were discontinued. At later visits the good conditions were still present.

Case V.—Mrs. C., thirty-one years of age, had not had much relief from ocular distress and headaches with all the glasses and prisms I had ordered since 1891. On July 20, 1893, she had a manifest exophoria of 7°, an adduction-power of 8°, and abduction 10°. I ordered prisms, 8° each eye, bases out, in fronts, and taught her how to use them. In two weeks her exophoria was 2°, and adduction 30°. The headaches, etc., had disappeared.

Case VI.—Mrs. T., aged fifty, had on July 25, 1893, an adduction of 6°, an abduction of only 3°, and at different examinations a vacillating high degree of exophoria of from 12° to 20°. Careful gymnastics in the office and at her home by the methods described had in three weeks halved the manifest exophoria, trebled the adducting power, and doubled the abducting power, with a complete cessation of the headaches.

Case VII.—Miss S., twenty-five years of age, had been under treatment by several physicians prior to coming to me in 1891. For one year my attempts to relieve her reflex symptoms and absolute inability to use her eyes ten minutes in reading were as resultless as those of others. There was a fluctuating exophoria varying from three to eight degrees, and every device I had tried proved a sorry failure. On May 5, 1893, I gave her prisms, 6° each eye, bases out, in fronts, and with these she carried out ocular gymnastics several times a day as ordered. In one week her adducting power had increased from 10° to 25°, and the manifest exophoria had fallen from 7° to 3°. On July 10th all exophoria had disappeared, adduction was 30°, her reflex symptoms had disappeared, and her greatly increased power of reading was a delight to her. I have not heard from her since, and as she was a very faithful patient and visitor I think the cure permanent.

Case VIII.—Mr. T., forty-seven years of age, had great redness and congestion of the eyes after he had read a little while. On September 2, 1893, he was found to have a manifest exophoria of 8°, ad-

duction 10°, and abduction 12°. On October 2d, after daily exercises with 10° prisms, bases out, his exophoria was 2°, adduction 28°, and no conjunctival congestion followed reading. He is still using the prisms, as I wish to produce an esophoria of about 2° and an adducting power of 35° before discontinuing the treatment, though he does not feel the need of improvement. Doubtless this has already been gained, but the patient lives at a great distance and can visit me but seldom.

CASE IX.—Mr. L., a young man of twenty-two years, came to me on July 14, 1893, with a simple hyperopia of 1.00 D., a manifest exophoria of 12°, and adducting power of 16°, abduction 5°. In one week's use of gymnastic prismatic exercises his adduction was 25°, his insufficiency 8° or 9°. On August 26th there was muscular balance and an adducting power of 35°. The gymnastic exercises were discontinued.

CASE X.—Mr. B., twenty-six years of age, had muscular balance, but an adduction-power of only 8°. In one week he could fuse prisms aggregating 27°, holding the image single at all distances and as long as desired, and his former trouble of headache, nausea, and dizziness had disappeared. I saw this patient three months later, and his adduction was 25° or more, and his convergence-stimulus adduction was 37°.

CASE XI.—Mrs. K., forty-eight years old, had been wearing, from another oculist, prisms, 4° each eye, bases in, for reading, divided for distance, but had constant diplopia. I found 4° of exophoria, an adducting power of but from 2° to 4°, and an abducting power of from 7° to 10°. After daily exercises with prisms for two weeks, 8° each eye, bases out, there was no manifest exophoria to be found, but I could develop 2° of latent weakness; the adducting power had increased to 12°, and, under convergence-stimulus carried to 20 feet, she fused 22°, bases out. One week later there was still the 2° of latent exophoria, but adduction had now become 20° and, with C.-s., 32°. The diplopia had ceased troubling her much. A week later no latent exophoria could be developed, the diplopia had disappeared, and the adduction-power was normal.

CASE XII.—Miss H., at her first visit had 8° of manifest exophoria, adduction 8°, abduction 8°, and a convergence-stimulus adduction developed in a few minutes to 25°. In two days the exophoria was 6°, the adduction 20°. In three days more the manifest exophoria had disappeared, but I could, with patience, bring out about 4° of latent. The adduction was about 30°, and the convergence-stimulus adduction over 35°. This patient was treated daily by myself, and illustrates the rapidity with which some cases react.

CASE XIII.—J. H. W., a lad of fifteen, had long had much trouble from blepharitis and conjunctivitis, despite the best correction of another oculist, and later of myself. I found a mostly-latent exophoria of 7°, adduction 11°, and abduction 7°. This was in my pre-gymnastic days, and I applied prisms, 2° each eye, bases in, together with the ametropic correction, and much attention was ordered as to school-work, exercise, the general health, etc.—all in vain. Gymnastic exercises, according to the foregoing method, were ordered, with weak prisms (6° each eye), and in three days his manifest exophoria was 2°, and adduction 22°. His constant prisms, bases in, were now replaced by his simple ametropic correction, and exercises continued at home. In two months there was orthophoria, adduction 27°, C.-s. adduction 35°. The result, I think, could have been reached in a week or two if I could have seen the patient often, exercising with heavier prisms, etc. His blepharitis and conjunctivitis had long ceased troubling him.

CASE XIV.—To illustrate the fact that even the highest degrees of insufficiency will react to this treatment, I will allude to a case that is yet incomplete, but which is steadily gaining ground every day. The patient is a little girl of seven, who had habitual alternate divergent strabismus, except when fixing an object attentively. From another oculist she had been wearing hyperopic lenses doubly over-correcting her ametropia, thus increasing the exophoric tendency. She kept the left eye closed a great deal. There was, on September 23, 1893, as near as I could estimate it, about 25° of exophoria, a power of adduction of only 2° or 3°, abduction 12°. I treated the child in my office for a while, and in three days she was able to fuse a total of 12° prisms, bases out, and with convergence-stimulus she could hold 20° at 20 feet. A week later she could at first fuse prisms bases out aggregating 27°, and after a few minutes' gymnastics she could hold 35°. The left eye was now kept open, the strabismus had disappeared, the exophoria was reduced to about 16°, and habitual binocular fixation reëstablished. The case, I judge, is proceeding to a perfect cure.

RUPTURE OF THE MALE URETHRA.

BY R. W. STEWART, M.D., M.R.C.S.,
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BY far the most frequent cause of rupture of the urethra is falling astride a resisting body, the weight of the blow being received on the perineum, and the urethra being forcibly crowded against the sharp edge of the triangular ligament, or against the symphysis or ascending ramus of the pubes.

Fracture of the pelvis, or even temporary dislocation of the pubic bones without fracture, is a frequent cause of rupture of the urethra, a fact that should always be borne in mind when one is confronted with these injuries.

Being thrown forward on the pommel of a saddle, or against the front wheel of a bicycle, or the old-fashioned treatment of breaking a chordee, may be included in the category of causes of rupture of the urethra, without by any means exhausting the list.

A discussion of the disputed theories of the exact mechanism of rupture of the urethra would be futile, as we have a condition to deal with, in determining

the means to be adopted for the relief of which no amount of theorizing from an etiologic standpoint would be of the slightest assistance.

The location of the rupture has a certain bearing on the prognosis and treatment, because, in a general way, the deeper the rupture is located in the urethra the greater is its gravity. Thus, ruptures of the pendulous portion usually owe their origin to but slight degrees of traumatism, such as the breaking of a chordee or the unskilful use of instruments. In these cases the rupture is rarely, if ever, complete; retention of urine is seldom a disturbing factor, catheterism is usually a very simple matter, and the liability to infiltration of the tissues by urinary extravasation is less serious than in deeper injuries. These cases form the mildest grades of ruptured urethra with which we have to deal, and they may be disposed of by briefly outlining their treatment. This consists in periodically withdrawing the urine by means of a soft catheter until such time as the rent in the urethra has become sealed. This may take place in a few hours, or at the longest in two or three days.

It is difficult to conceive of a rupture of the prostatic urethra other than that produced by the surgeon in attemping to remove a foreign body or new-growth from the bladder through a perineal incision, and as such cases plainly do not come within the scope of this article they shall receive no further consideration.

Rupture of the bulbous and membranous portions of the urethra may be classed together, as it is frequently difficult or impossible to determine the exact site of the rupture, because the symptoms of both are often identical and but seldom distinctive enough to be of much localizing value. However, if a tense, fluctuating tumor has formed in the perineum, and the scrotal tissues are intact, we are justified in holding that the extravasation is confined within the layers of the triangular ligament, and that the rupture is necessarily limited to the membranous portion of the urethra. Conversely, if the perineum is intact and the scrotal tissues are infiltrated, we may hold with equal propriety that the rupture is anterior to the membranous urethra. This, however, is a distinction without a difference, when we come to consider the treatment of these injuries, and it frequently happens that the traumatic cause of the injury has been so severe as to break down the dividing barriers of fascia, so that a rupture in either situation, if the extravasation be unrelieved, may be followed within a day or two by most extensive urinary infiltration. In severe cases the urine may infiltrate the perivesical, the perineal, and the scrotal tissues, and travelling still further it invades the loose tissues of the penis, pubes, and abdominal wall. In one case I have seen it invade the subcutaneous tissues of the thigh, from Poupart's ligament to the knee. The aspect of such a case is a most striking one: the bulging perineum, the enormously distended scrotum, the distorted phimotic penis, and the thickened belly-wall—all blackened by the infiltrating bloody urine, together with the agonizing distress of the patient suffering from the worst of all tortures, retention of urine, make an impression at once as lasting as it is unmistakable.

This is a picture of the worst cases with which the surgeon has to deal, but it should not be forgotten that it not infrequently happens that the rupture of the deep urethra is so slight, and the amount of urine extravasated is so small, that Nature is enabled by means of inflammatory exudates to limit the extravasation to narrow bounds, the extravasated urine, if not interfered with, either undergoing absorption, with a return of the parts to their normal condition, or if the urine undergoes decomposition, setting up a destructive inflammation with, at the worst, the formation of a perineal fistula.

Cases of extensive extravasation of urine, if left to the unaided efforts of Nature, are as surely fatal as would be the uninterfered-with course of a strangulated hernia. It is true that in extremely rare cases a strangulated hernia may by sloughing and abscess-formation find a safe exit for the intestinal contents; it is equally true that the vesical contents may find a similar exit by sloughing of the infiltrated tissues; but the chances in either case of the patient surviving until Nature has brought relief are so slight that no hope should be entertained; nor should a minute of precious time be wasted on the illusory efforts of Nature to effect a cure.

In the treatment of a rupture of the urethra with urinary infiltration we must promptly meet two urgent demands: First, to give free vent to the urine which has escaped from the bladder and permeated the loose connective tissues; and second, to relieve the distended bladder and afford a natural exit to the vesical contents.

In regard to the method of relieving the tissues of the extravasated urine there need be no controversy—early and free incision has been the recognized treatment in the past, as it will be in the future. In making these incisions it should be borne in mind that if ammoniacal decomposition of the urine has not set in, the urine has but slight irritating properties, and Nature may, as a rule, be safely left to take care of the tissues, provided free drainage has been afforded through perineal and scrotal incisions.

The best method of accomplishing the second indication, namely, to afford an exit to the vesical contents through the natural channel, is still in some respects a debatable question. The ideal method of accomplishing this would consist in passing a cath-

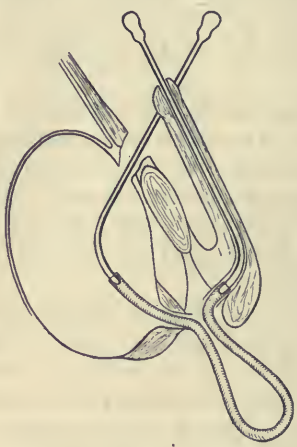
eter through the anterior urethra past the rupture and into the urethra beyond to the bladder, and retaining it there until the wound in the urethra has become sealed. A diligent, but not too protracted effort should be made to accomplish this end, and it will often meet with success, but in a large proportion of the serious injuries to the urethra, especially when the rupture is complete and the torn ends are separated by from half an inch to an inch and a half, it is simply impossible, even with the greatest skill and care, to introduce a catheter into the bladder. In these cases we are confronted with what has proved to be one of the most difficult problems in surgery, the ultimate solution of which, if treated according to the methods laid down in the standard text-books of surgery, is, to say the least, problematic.

The recognized treatment of the past has been either to resort to supra-pubic aspiration for the relief of the distended bladder and to trust in Providence for a cure, or else to boldly attack the situation by attempting to find the proximal end of the torn urethra through a perineal incision—a feat which may be easy on the cadaver, but is usually difficult and often impossible on the living patient, owing partly to the depth of the wound, but still more to the impossibility of recognizing the disorganized tissues in which the urethra lies. The history of such cases often is, that the operator blindly gropes his way in a deep wound, the bottom of which he cannot see, in search of a urethra he cannot feel, until, goaded to desperation by the futility of his efforts, he does by foul means what he cannot do by fair—he forcibly thrusts a catheter, regardless of the urethra, into the bladder with results that are, to say the least, disastrous. I have twice seen this done by competent surgeons, death resulting in one case and all but death in the other.

Difficult, dangerous, and uncertain as is the perineal method of attempting to restore the continuity of a ruptured urethra, it has the weighty endorsement of such text-books on surgery as Holmes, Bryant, Gross, and Moullin. Ashhurst's *System of Surgery* recommends opening the urethra through the perineal wound at a point beyond the rupture and performing retrograde catheterism—a feat which would be just as difficult and uncertain as finding the torn end of the urethra. Even the most modern text-book of surgery in our language, the *American Text-book of Surgery*, gives but a half-hearted endorsement of a method infinitely superior to the one we have been discussing. It says: "If persevering and careful search fails to reveal the proximal end of the torn urethra, supra-pubic cystotomy for the purpose of retrograde catheterism is justifiable, the distal end of the torn urethra being almost always easily discoverable."

The comparative advantages of the perineal and supra-pubic methods of treating rupture of the urethra are overwhelmingly in favor of the latter, a fact which will become obvious when we consider the technique of the latter operation.

The method I have adopted is as follows: The scrotum and perineum are first incised, to give vent to the extravasated urine; the incision in the perineum will enter a pocket containing bloody urine. The distended bladder is opened above the pubes by an incision just large enough to admit the index finger, which should at once feel for the vesical orifice of the urethra. A medium-sized steel sound is insinuated by the side of the finger and into the vesical orifice of the urethra; the finger should then be withdrawn from the bladder and the sound thrust along the deep urethra until its tip appears in the perineal incision previously made for the relief of the extravasated urine. Over the projecting tip of



the sound a rubber tube or, more conveniently, a soft catheter with its blind extremity snipped off, is forcibly thrust, and the sound, carrying the catheter with it, is withdrawn from the deep urethra into the bladder. The catheter is then detached from the tip of the sound and the latter is passed through the anterior urethra, until its tip likewise presents in the perineal incision; the end of the catheter which projects from the perineal wound is fitted over the tip of the sound which is withdrawn from the urethra, as is shown in the accompanying diagram, thus threading the catheter through the entire length of the urethra, where it is retained *in situ* by thrusting a safety-pin through it and one of the lips of the meatus.

If desired, the torn ends of the urethra may be approximated over the catheter by means of catgut sutures. The catheter should be retained in the urethra for from four to six days, after which the periodic introduction of full-sized steel sounds should be practised to prevent stricture-formation.

Of six cases of rupture of the urethra which I have treated I have succeeded in passing a catheter without resorting to operative interference in three. In two of these catheterism was only accomplished after it was thought impossible to do so, and the patients were placed in the lithotomy position preparatory to incising the scrotum and perineum.

In the three remaining cases I failed to pass a catheter and resorted to retrograde catheterism in the manner described. In one of these cases I attempted to find the torn urethra through a perineal incision, but failed. In one case there was slight leakage through the supra-pubic wound for eight days, in another for three days, and in one not at all. I may add that in all six of the cases recovery was satisfactory.

When we consider that in rupture of the urethra the bladder is distended from the associated retention of urine, facilitating its opening through a supra-pubic incision, and that the perineal incision for the relief of the extravasation is available for the threading of the catheter along the urethra, and also that no unforeseen circumstances can mar the success of the operation, the steps of which are as definite as those of an amputation, there can be but one conclusion: that the supra-pubic method should relegate the uncertain perineal method of treating this dangerous injury to the same obscurity that the supra-pubic method has relegated the perineal method of extracting stone from the bladder.

Westinghouse Building.

OXALIC ACID AS AN EMMENAGOGUE AND OXYTOCIC.

By HOMER C. BLOOM, M.D.,
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Instructor in Gynecology in the Philadelphia Polyclinic;
Outdoor Surgeon to the Gynecean Hospital.

It has been denied that there are such agents as emmenagogues, because "the discharge from the uterus is not one of the excretions through which medicinal agents pass out of the system."

This is but one of many theories which practice proves to be false. There is not an organ in the body that responds to medication more promptly than the uterus. Trousseau asserts "that all general excitants may be emmenagogues," as the uterine system does not escape the stimulation which these agents produce throughout the entire organism. I wish to call attention to one emmenagogue that I believe worthy of special confidence—oxalic acid.

How it acts, or why it acts thus, I am not prepared to say; theoretically I can give no explanation, and, indeed, no one seems to understand its peculiar action in this direction; but from practical observation it acts, in a large majority of cases, as the surest emmenagogue we can employ.

It is two years since I first observed a little article taken from some foreign medical journal relative to the possible value of oxalic acid in amenorrhea. I made a note of it, and in a short time found an opportunity to prescribe the drug.

Case I was in a girl, eighteen years of age. She was well developed, and for three years she had had all the premonitory symptoms of puberty—a monthly periodicity of associated symptoms characteristic of commencing menstruation; peculiar sensations, such as lassitude, pains in her back, gastric disturbances, irritability, flushes, with at times severe hypogastric pains. Frequently, at these periods, sympathetic breast-soreness occurred, in which the mammary glands were so irritable that the slightest pressure of the clothing gave pain.

I ordered the following prescription:

℞.—Acid. oxalic. . . . . gr. viij.
Aquæ } . . . āā f℥ij. M.
Syrup. limonis }
Sig.—A teaspoonful four times a day.

After taking the medicine for three weeks the girl reported that during the previous week she had seen her menses for the first time. They had lasted one day and a half, were free from pain, the flow soiling three napkins.

She was asked to continue the prescription as before ordered. At the expiration of five weeks she reported that her sickness had come on at the expiration of twenty-eight days, lasting three days, and being perfectly normal.

The drug was discontinued and the girl was requested to report in three months, which she did, saying that her sickness had returned every twenty-eight days, and that she was in excellent health and had no symptoms.

I might add that in this case all the regular routine treatment for amenorrhea, or retarded or delayed puberty had been employed, such as hot douches, sitz-baths, and drugs many and various.

Case II was in an unmarried woman, twenty-five years of age, a native of Ireland. She had been perfectly regular in her menses prior to coming to this country, but never saw them after leaving Ireland. Her general appearance was fair; she had a good physique, was well nourished, and was a bright and intelligent girl. Her symptoms were flushes, with headaches, in which she complained of her head having "too much blood in it," with backache, etc.

I ordered the oxalic acid in quarter-grain doses, four times a day, requesting her to report from time to time, which she faithfully did, and after taking the drug for four weeks she reported that her monthly illness had come on for the first time, and she was entirely relieved of her symptoms, being "regular" thereafter.

This patient gave a history of having gone from one dispensary to another without any improvement.

Of twelve cases similar to the foregoing in which I have prescribed oxalic acid, and in which amenorrhea has existed for from six months to three years,

there were only two failures, and in both of these there was evidence of pulmonary trouble. I believe oxalic acid to be a drug that can be relied upon as an emmenagogue in all cases purely dependent upon some functional disturbance, of course bearing in mind that amenorrhea is not in itself a disease, but simply a result of some morbid condition affecting either the system at large or some part of the genital apparatus.

Probably there is no other disease in which the function of menstruation is interfered with to the same extent as in chlorosis, and it is in the treatment of this condition that I would ask for a more extended trial of this drug. I have had only three cases in which there was marked chlorosis. In two of these cases the drug acted quickly and promptly. In the other case, I found the anemia to be so profound that it was necessary to use iron in various forms before any improvement took place.

In several cases of scanty menstruation the drug has effected very good results. In others it has had no effect whatever. For example:

CASE III occurred in a married woman, thirty-three years old, sterile, with a history of the menses growing less in quantity and at greater intervals for the past three years, with lassitude, headaches, general irritability, nervousness, etc. Her menses last but a day and are very scanty and often six weeks apart. I ordered oxalic acid, in quarter-grain doses, four times a day, continued for six weeks, and normal and regular menstruation was reëstablished.

As to the action of oxalic acid, at or near the menopause, in those cases in which we find an absence of the menses for three, four, five, or six months, together with all of the phenomena attending menstruation, as well as the flushes and nervous condition incident to the climacteric period, I have in several cases seen decided benefit attend the increased menses, but in the large majority of cases the action has been negative.

As to the action of oxalic acid as an oxytocic I can positively say that it has decided ecbolic properties, having acted decidedly as an abortifacient in several cases.

CASE IV was in a woman, aged thirty, married six years, with three children, the last one born eighteen months ago. The menses appeared for the first time after the birth of her last child six months ago. They had been less in quantity than after previous pregnancies. She had flushes, nervous headaches, pains in her back, and constipation.

A saline was ordered and she was requested to report again. No examination was made. In the meantime her menses came on, but merely a show, with all of the phenomena and symptoms of the unaccomplished function.

Without any examination, I ordered oxalic acid in quarter-grain doses, four times a day. I had the mortification of being told by the same patient six days afterward, that she miscarried promptly after taking the medicine two days, and that she had had no untoward symptoms.

From the description of the products, as she gave it, I should think that she had been about two months pregnant.

A few days after this occurred, in speaking of it to my chief, Dr. Baldy, he told me of a similar case occurring in his own experience at the Pennsylvania Hospital dispensary, in which the patient returned and kindly requested the same prescription, "as it was one of the best she had ever taken to get rid of the unwelcome products of sexual intercourse."

The two cases just mentioned, with several others that I shall note, prove the ecbolic influence of oxalic acid in perfectly safe doses.

Probably the safest procedure for securing a miscarriage when medically necessary is operation, yet there are contingencies likely to arise which could best be subserved by the action of a reliable and safe oxytocic. This is my excuse for calling attention to the power of oxalic acid in perfectly safe doses as an abortifacient. The first case in which I prescribed it, as an ecbolic, is as follows:

CASE V.—Mrs. D., aged twenty-seven, had been married three years. She had had repeated miscarriages, at periods ranging from six weeks to three months. She had not seen her menses for six weeks, had obstinate nausea and vomiting, frequent desire to pass water, some mammary symptoms, constipation, etc. She was greatly reduced in strength and in the first stages of chronic pulmonary trouble. Her husband, also a patient of mine, is in the advanced stages of pulmonary tuberculosis. The woman had pulmonary hemorrhages, obstinate cough, a pronounced hectic condition, with other rapid progressive pulmonary symptoms. My efforts in the way of local applications to the cervix and uterus, as well as means directed to her digestive organs, and constitutional measures, availed nothing in the way of relieving her most obstinate nausea and vomiting.

The case was a desperate one. There were two results that seemed inevitable. First, the possibility of a miscarriage from an exhausted condition, and from the fact that she had had repeated miscarriages. Second, the death of the mother before the viability of the product of conception. To take the risks of the first was a course not only fraught with too much danger, but entailing the loss of valuable time, most likely the balance between life and death. The second was out of the question, for upon the life of the patient, however short, depended much.

With the certainty of either of the two inevitable results just mentioned, I hesitated no longer as to what was right; and there was every reason why this should be carried out with as little nervous shock as possible. With this before me and the fact of my previous unintentional experience with oxalic acid as an oxytocic, I made up my mind to try the drug. The patient was put upon quarter-grain doses

every four hours, in solution. After three days' use it had the desired effect, bringing on a miscarriage, followed by no untoward symptoms, but on the contrary complete relief from the nervous reflexes of pregnancy.

The remaining case, in which the ecbolic power of oxalic acid was proved, is as follows:

Case VI.—Mrs. H., aged forty-two, the mother of seven children, had the last pregnancy eighteen months ago. Menstruation was regularly reëstablished twelve months after the birth of the child, until eight weeks ago, when it ceased. The woman was sure from past experience that she was pregnant. Frequent desire to pass water, morning sickness, a bluish tint of the vagina and of adjacent soft parts existed. The cervix was soft, the uterus enlarged in its antero-posterior diameter, and the uterine arteries were easily felt.

The woman was nervous and anxious about her condition, for she was suffering from a large suppurating carcinoma of the left breast, involving the axillary and contiguous glands.

Here was a case that, in a few short months, would prove fatal. The history of her past pregnancies was such that additional suffering was more than she could bear.

There was no hope of her living until the viability of the product of conception, and there was every reason why she should be spared the additional suffering incident to her condition.

With this excuse, and the hearty coöperation of the patient and her husband, I therefore had no hesitancy in adopting such measures as would relieve the woman. She was put on quarter-grain doses of oxalic acid in solution every three hours. After three days she miscarried, without any ill-effects.

I have now used oxalic acid in some forty odd cases of amenorrhea, depending upon all the different causes, other than physiologic, which are likely to enter into the suppression of the menstrual function. Its reliability as an emmenagogue may be judged from the fact that it proved successful in three-fourths of the cases. As an oxytocic it proved its power in the four cases herein mentioned.

1427 Walnut Street.

ORIGINAL ADDRESS.

MEMORIAL OF PROFESSOR JEAN-MARIE CHARCOT.[1]

By PROFESSOR M. ALLEN STARR, M.D., Ph.D.,
PRESIDENT OF THE NEW YORK NEUROLOGICAL SOCIETY, ETC.

Gentlemen: It is my painful duty, at this the first meeting of the New York Neurological Society after the summer recess, to announce to you the death of our distinguished Honorary Member, Prof. Jean-Marie Charcot.

It is fitting that on this occasion we should turn from our ordinary proceedings and offer a tribute of respect to the memory of one whom we unite in considering the greatest leader in that department of medicine in which we have a common interest.

Charcot was born in Paris on the 29th of November, 1825. He was the son of a wagon-maker, a man of such limited means that he was not able to give all of his children an education. Jean-Marie, however, showed so much ability in school that he was selected from among his brothers as the most promising member of the family, and while one brother was enlisted as a soldier and another put to work in the father's shop, he was allowed to enter the Lycée St. Louis, at that time the best academy in Paris. After his preliminary education was completed there, the choice of the medical profession was made after some hesitation, for the inclination of the young man was for the life of an artist, and it was possibly the lack of means that finally determined him to take up medicine. After passing through the medical school and serving as an interne in La Salpêtrière—an almshouse for old women, then almost unknown, but later to become famous as the theater of his wonderful activity—he took his doctorate degree in 1853.

For the next three years he served as chief of the medical clinic in the medical school, supporting himself meantime by giving private tuition. He was then appointed physician to the Central Bureau of Paris, with a moderate salary, his duties being to examine applicants for the hospitals and assign them to the proper services. While filling these positions and slowly making his way, he was not idle, but was preparing for that competitive examination to which ambition for success leads every young physician in Paris.

It is to be remembered that hospital appointments in France are under Governmental control, and that as fast as vacancies upon the attending staff of hospitals occur they are filled by the appointment of men who have qualified themselves for these positions by passing a very rigid examination, by presenting theses, and on occasion defending in public debate the position taken in the thesis. Charcot succeeded in passing this examination in 1860, at his second trial, and it is said that he always supposed that he owed his success to his ability in defending the points made in his thesis upon chronic ulcerative pneumonia, which were ruthlessly questioned and criticised by his examiners. Later the discussion of theses was abandoned by the official examiners, much in opposition to Charcot's views, as he never forgot his own experience.

Having qualified for a position as attending physician to a hospital, Charcot was able to select in 1862 the service at his old hospital, La Salpêtrière. He found a large number of old people collected together in this poorhouse, and among them many with chronic incurable diseases. He had opportunities to watch the progress of disease, both acute and chronic, in old age, and, most important of all, he had unlimited pathologic material to supplement his clinical observations. It is to this latter fact that he owed the beginning of his reputation. For at that time pathology was just beginning to reveal the true reasons for diseases. It was an epoch of rapid progress in medicine. The nature of disease, the changes in tissues which caused the manifestation of symptoms, were just beginning to be recognized. Symptoms were no longer being regarded as diseases, but were being

[1] Read before the New York Neurological Society, October 3, 1893.

grouped together in classes and assigned to the actual pathologic process that lay at their base. If you will glance over any general treatise upon medicine written in 1862 and select the chapters that deal with nervous diseases, or rather with symptoms that we now know to be of nervous origin, you will be amazed at the degree of ignorance, in comparison with our present knowledge. It required a man of Charcot's ability in clinical observation, power of continued, earnest endeavor, talent for classification and broad generalization, diligence in pathologic study—a branch of medicine that requires unending patience, hard work, delicate manipulation, and constructive genius of the highest kind—to bring order out of the chaos of ignorance. By the careful study of his cases, by his power to seize upon salient features that present points for differentiation, by his persistent following of cases from the clinical ward to the autopsy-room, and by the exhaustive study of the material collected there, he began to reach conclusions, to arrive at facts which were veritable discoveries in the medical world. Study the files of the *Gazette hebdomadaire* from 1860 to 1870 and you will find a series of articles from his pen, each of which adds a distinct fact, observation, or conclusion to the sum of medical science.

These articles soon began to attract attention, and the young hospital physician found his rounds beginning to be attended by students who liked to watch his careful study of cases, or see him demonstrate the lesions that he found. In 1866 a small room in the hospital was set aside for the purpose of instruction and he began to hold clinics and to lecture. The lectures were soon crowded by graduates in medicine, and the next year he was invited to give an open course of lectures at the Ecole pratique of the medical school. Here he had an opportunity to cultivate the power of teaching and soon showed that wonderful facility of clear, direct statement and power of graphic illustration that later made his lectures the most attractive in the world. His first open course had for its subject cerebral hemorrhage and softening—an early indication both of his preference for neurology and of his firm belief in the need of pathologic study. In the following year he demonstrated for the first time the clinical and pathologic differences between paralysis agitans and multiple sclerosis, up to that time confounded under the title of "tremblement choreiform." There is little to-day for the writer on this subject to do but to present in inferior form the facts contained in those lectures. In his succeeding course he described the arthropathies appearing in the course of locomotor ataxia, which have ever since been known as Charcot's joint-disease. The next year the course was upon trophic disturbances following cerebral and spinal disease, and this course, given in 1870, necessitated the opening of a larger hall, as the number of students had already outgrown the small one. Thus, within four years, he had risen from the position of an unknown teacher to that of one of the best lecturers in the Paris school.

The year 1870, so full of sad events for France, brought a change in the service of La Salpêtrière. Under the exigencies of the war many buildings near Paris were destroyed and hospitals were in demand, and a new classification of their inmates necessitated the removal to La Salpêtrière of all female epileptics and hysterics that were not insane. This afforded Charcot new material for study, and from 1872 the study of hysteria in its multiform manifestations became one of his pursuits. This fact does not at once appear either in his writings or in his lectures. In fact, it was not until six years later that his work indicated any special interest in this new class of patients. But that the presence of this class at La Salpêtrière had its influence no one who has watched the recent investigations made within its walls will deny.

In 1872 Charcot was made Professor of Pathologic Anatomy in the Faculty of Medicine in Paris, the highest prize in the French medical world. For the ten following years he held this position, contributing in that time many facts upon diseases of the lungs, liver, and kidneys, and other organs, meanwhile, however, not neglecting his other lectures at the Salpêtrière upon diseases of the nervous system. It was these latter that were his favorite studies, and it was in this department that his work brought renown to himself and to France.

In 1882 this fact was officially recognized by the French Government, under the leadership of Gambetta—a personal friend of Charcot—by the foundation in the Medical School of a Professorship of Nervous Diseases, and Charcot's appointment to it, with the establishment of a public clinique at La Salpêtrière. From that time to the present year his annual courses of lectures have been attended by students of medicine from every land, and it may be truly said that there are few men of eminence at present living and working in neurology who have not drawn inspiration from his model clinics.

It was in the spring of 1883 that I had the good fortune to be numbered among his students, and it may be of interest if I relate some details of his work. On three mornings of the week, at nine o'clock promptly, he would come to the dispensary of the hospital and seat himself behind a little railing, which separated him on one side from the patients and on the other from the crowd of students, many of them foreigners, and all graduates in medicine. His assistants would then bring the patients, one by one, from the adjoining waiting-room. A concise history would be given of the case. Then Charcot would ask some searching questions, would elicit some unexpected symptom, would discover some physical appearance that others had not noticed; would examine the patient himself if there was any special point of interest, and then would quickly state his diagnosis, supporting the position taken, or discuss the probabilities or difficulties of diagnosis, often with interesting comments, and finishing occasionally with some therapeutic suggestion. Some patients were admitted directly to the hospital; others were referred to the assistants for treatment, but were not lost sight of, for it was not an infrequent occurrence for him to inquire, from time to time, about old patients, to have them brought in from the other rooms in order to note their progress or to compare them with some new patient, often with an appearance of personal interest that it was a pleasure to observe. After two hours of this work he would enter the hospital to make the rounds in the various wards. Here he would often stay till one o'clock, examining patients in bed or having them brought to one of the many rooms devoted to special investigations—to the eye-room, where careful tests of the visual fields for form and color were at that time engaging his attention;

to the photographers, to secure just the picture that he wanted of their deformity; or to the electric room, for tests or for therapeutic applications. He would often go to the bath-house, where he had had constructed all the various forms of douches and showers to which he attached much therapeutic value. He would also go to the laboratory and show us specimens, even slides under the microscope, of lesions, which had relation to the cases that we had seen in the wards. Lastly, we would gather in his own study—a room whose walls were covered with photographs illustrating disease in art, copies of celebrated paintings whose subjects were the healing of disease by miracle, a subject of which he always delighted to speak; for in the attempt of the painter to show the poor sufferer for whom the miracle was performed, he would detect a model suffering from hysterical contractures, or from hysterical convulsions, or some victim of a real paralysis. Many of these pictures have recently been published, with his comments, in the *Nouvelle Iconographie de la Salpêtrière*.

I remember that at that time there was a remarkable case of aphasia of the variety known as word-blindness in the hospital—a man who could talk and write, but could not read what he had just written—and Charcot would have him brought to his study day after day and put him through numberless tests, and then draw out some diagrams to illustrate aphasia, one of which he subsequently published in recording the case. This was the routine work of three days in the week, the best hours of the day being given up to his hospital service.

On Tuesdays the public clinic of the week was held in a large building just within the hospital gate. The room was arranged with a stage and footlights, and tiers of seats arose from the front level to quite a height at the rear of the room. As many as 600 students could be seated, and the place was always full. After the audience had gathered, dark shutters were closed at the windows, the footlights were turned up, and the clinic began. Charcot, attended by a number of his assistants, entered and seated himself on one side of the stage, at a little table, looking not at his audience, but across the stage. Then the patient or patients, for he usually showed a number at once, either to display variations of one disease, or to draw contrasts with other diseases, were placed before the footlights, and sometimes when a particular feature had to be demonstrated, a calcium light was turned on the patient, whose figure, the chief point of light in the darkness, could always be perfectly seen by all. In a clear but not loud voice, with a slowness of speech that led to a clear understanding—especially to the foreign element in his audience—Charcot would describe the case, call attention to special symptoms, show the peculiarities of spasm or deformity or tremor or gait, compare them with other similar forms for the purpose of differentiation, and sum up the diagnosis. Then, dismissing the patient, he would begin to describe the lesion, and at once on the screen at the opposite side of the stage the magic lantern would flash out the picture he was trying to draw, either in the form of a sketch made from Nature or an actual slide of a section of the spinal cord, or a part of the brain magnified by the microscope. Thus, symptomatology, diagnosis, and pathology were presented in orderly succession in a manner most clear and forcible, and with an effect that was most instructive and impressive. It has been said that the whole clinic was arranged for theatric effect. I believe that it was the only manner in which it was possible to demonstrate in a clear light to the large audience all the features, clinical and pathologic, of the subject. But grant that it was theatric; it left on the mind of the student a series of mental pictures of patients and of lesions which no amount of private study could possibly produce. It taught men so that they could not fail to remember, and what higher result can a teacher wish. And the students appreciated it. They gathered enthusiasm from Charcot's evident earnestness. No teacher has ever had such a constant company of devoted young men about him, eager to share in his studies, to be directed in their investigations, to be considered a part of his working force. He had the faculty of engaging their interest, of stimulating their investigations, of directing their work. He supplied them with material and showed them how to use it. As a result, there have appeared in France during the past fifteen years an enormous number of clinical and pathologic researches in the department of neurology, all of them inspired by Charcot, though carried out by some one of his pupils. He built up the school of the Salpêtrière. One can hardly name a young man of eminence in medicine in France to-day who has not at some time been glad to call himself a pupil of Charcot. And when, in addition to the long list of his own articles—his collected works will fill fifteen large volumes—the articles are collected on which his name appears as collaborator, there is presented a mass of medical literature far surpassing that of any other medical school in the world.

Bourneville has said that Charcot was not fond of writing or of publication, that it required two years of constant urging to induce him to publish the first two volumes of his lectures, and that he never would have given to the world many of his articles had some one of his assistants not attended to the details of publication. Fortunate then for the medical world, that he had these devoted assistants, by whom some of the drudgery of work could be carried, and through whom his marvellous knowledge could be spread abroad for the benefit of science.

It would take too much time to allude to his various books, lectures, and articles published between 1865 and 1892. I cannot, however, omit to mention his collection of cases of local lesions in the brain and spinal cord, which did much to establish on a firm basis the doctrine of the localization of cerebral and spinal functions, and which appeared in the *Revue de Médecine* in 1879, and his numerous valuable papers on the pathology of spinal lesions. It should also be known that, with Vulpian and Brown-Séquard, he founded the *Archives de Physiologie* in 1869; the *Progrès Médical* in 1873; the *Revue mensuelle de Médecine et Chirurgie* in 1877, now known as the *Revue de Médecine*, which still bears his name; the *Archives de Neurologie* in 1880; and the *Nouvelle Iconographie de la Salpêtrière* in 1888. To all these he continued to contribute from time to time until his death. It is said that no other medical work has ever approached the sale that his three volumes of lectures published from 1872 to 1880 have had. These lectures have been translated into German, English, Spanish, Italian, Hungarian, and Russian, and new editions are called for every year.

Public recognition of his abilities and eminence was not wanting. He had been president of all the chief medical societies in Paris, was a corresponding member of numerous societies abroad, of our own Society and of the Academy of Medicine in this city, and was made a member of the Institute of France in 1883 and Commander of the Legion of Honor in 1892. It may be justly said that France honored herself by conferring honors upon him, for there are few Frenchmen who, during the past quarter-century, have done as much to support the waning French authority in matters of science or to preserve the fading reputation of the French school of medicine. Not medicine alone, but French prestige as well, has reason to regret his untimely demise.

It has been made a matter of criticism that during the past few years Charcot's attention had been very largely directed to the study of hysteria and to the investigation of hypnotism and allied subjects. As we have already seen, it was force of circumstance that brought to his immediate notice this branch of nervous affections—a very large number of hysterical patients having been transferred to La Salpêtrière at the time of the war. When he turned from the study of organic diseases to that of functional affections he found the knowledge of hysteria in a chaotic state. Isolated observations had been recorded, but no definite classifications had been made. Theories abounded, but no real explanation or working-hypothesis on which to approach the subject was established. He began by grouping certain types together and clearly distinguishing them from others. He described in detail the more pronounced manifestations of hysterical convulsions, the epidemic forms of hysteria which had appeared all over Europe, in the past and even recently. He brought out clearly the sensory disturbances, the anesthesiæ, and visual defects of the hysterical sufferer. He called attention to the vasomotor and trophic symptoms of this affection. And thus, as one reads even the titles of his various articles, one begins to get an orderly view of the various types of the disease. With the facts of the affection before one, it is easy to follow Charcot into the more obscure ranges of speculation regarding its nature. Two conclusions largely established by his reasoning must now be admitted: *First*, that there is usually a basis for hysteria in a hereditarily degenerate nervous system; that its existence almost always implies some inherited weakness of brain-structure. *Secondly*, that, however various its manifestations, however distant from the central organs its point of appearance, hysteria is a disease of mind and brain alone, is central in its location. It is to prove this that all Charcot's researches into hypnotism tend. It was his great discovery that any hysterical symptom can be exactly reproduced in a healthy person by hypnotic suggestion—in other words, that the basis of hysterical manifestations is an abnormal mental state. The abnormal mental state being established, causes powerless to affect such results in health are potent to produce the peculiar manifestations known as hysterical. If these basal facts were the only outcome of Charcot's investigations upon this obscure subject, they would have been an ample return for the labor expended.

Charcot's investigations in hypnotism have attracted much attention both from the profession and from the laity. It is difficult for anyone to enter upon the study of this subject, or to pursue it with any degree of thoroughness, without subjecting oneself to adverse criticism and remark. One might have supposed that the reputation of Charcot would have protected him from such criticism, for never was one imbued more deeply with a desire to learn the truth, never was one more averse to that spirit of charlatanism which seeks notoriety or personal emolument. Charcot did not, however, escape the envious criticism of would-be rivals, or the ignorant comments so largely traceable to the public press. Even since his death one has read with regret the wholly erroneous estimates of his character which have been made in the daily papers by men of no knowledge, who allude to his recent work on hypnotism as if his reputation rested on that alone. It it difficult to estimate the true value of this department of his labor, but it cannot be denied that all through the years that he devoted to this study his mind has been imbued with the purest scientific motives; that facts and not theories were his aim. We may not accept his interpretation of the facts; we may even doubt some of his conclusions, but we must admit that the work has been done on a very different plane from that on which similar investigations had previously been conducted, and that, throughout, personal considerations were entirely in abeyance.

Another criticism that has been offered is that in his scientific zeal he neglected therapeutics, that his interest in patients ceased with the diagnosis. But those who make these statements must surely forget that our best methods of treating functional and hysterical nervous diseases, viz., the electric methods and the hydrotherapeutic methods, were successively developed and most successfully employed by Charcot. The use of baths and douches was introduced by him in La Salpêtrière many years ago; and to-day all over Europe, and I am glad to say at last in this country, the great remedial value of water-treatment is being acknowledged, largely through his influence. And even in the treatment of organic nervous diseases, where every scientific man feels that his object is at best merely to palliate suffering, as he cannot alter tissues, we owe some fairly useful methods to his experience and investigations. The use of the Paquelin cautery, of the ethyl chlorid spray, of the suspension apparatus, of vibratory therapeutics, may be cited.

It remains to allude to his personal characteristics. Charcot was a man of great dignity, of calm repose, of even temper, of slow thought and utterance, but of much reserve power. In appearance like Napoleon, and in manner reserved and observant, he was not the type of man to be popular. Yet his dignity was one that was felt to be appropriate to a man of great power and was never assumed. With patients suffering from trifling affections he showed no sympathy, possibly no interest. With patients whose diseases were grave, or obscure, or of rare type, he was kind, attentive, interested, and was ready to spend valuable time in most careful investigation. Of this I am assured by patients who had been under his care, and who would never have come away with such kindly feeling had they not experienced his thoughtful attention. His relation to his pupils was also one of mutual interest and affection. He was never familiar with them, yet he always respected and sought their opinions, was never autocratic in the

direction of their work, and was always the subject of their devoted admiration and respect. No man could have kept about him such a number of able medical workers, all loyal to him in the midst of their labors, without characteristics of many kinds of the noblest type.

His domestic life was a delightful one. He was married early in life to a lady of considerable wealth, who was enthusiastic in his work, and by whose aid many scientific undertakings otherwise impossible were carried out. He had two children, one a boy, whom it was his fond desire to see succeeding as a physician, and who gives promise of being worthy of the name. Their homes—he had a large country place at Neuilly as well as a fine mansion on the Boulevard St. Germain—were superb in every appointment and contained many treasures of art, for the artistic sense was one which he delighted to indulge. He was a designer, a painter on porcelain and in oils. The tiles in his study mantel and the ceiling of one of his salons were painted by his own hand. Many of the drawings displayed at his lectures and published in his books were drawn by himself. And he delighted in gathering about him curios of every kind. He cared less for music than for painting, and always preferred the classic and Italian schools to Wagner, showing himself thoroughly French in this respect.

Like every man of eminence he had his enemies, critics in science, rivals in medicine. Yet after all their criticism is exhausted, we must admit that Charcot remains the greatest French physician since Trousseau, the greatest ornament of the medical profession of the present age. We admire his genius; we esteem his scientific work; we respect him as the greatest of medical teachers; we honor him as a noble, unselfish, and truly great man.

CLINICAL MEMORANDA.

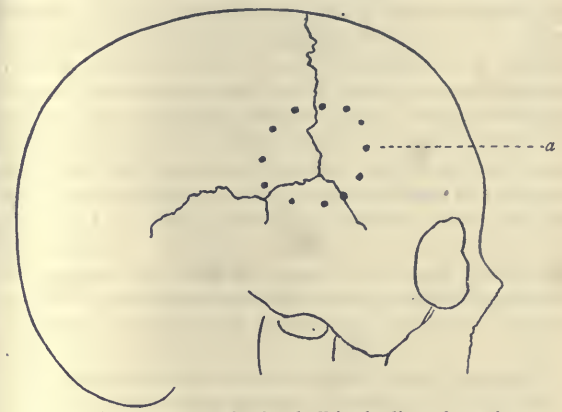
TRAUMATIC HEMORRHAGE IN THE RIGHT CEREBRAL HEMISPHERE; RECOVERY.

By R. EMMETT GIFFEN, M.D.,
of Lincoln, Neb.,
Surgeon-General National Guard of Nebraska; Surgeon-in-Chief St. Elizabeth Hospital, Lincoln, Neb.

D. Y., twenty-three years of age, a Russian, living in the squatter portion of the city, on December 8, 1892, while quarrelling with a companion, was struck on the head with a hatchet, the pole of the hatchet striking him on the right side above the ear and to the front, about the junction of the temporal, parietal, and frontal bones, and producing a lacerated wound.

He was seen by Dr. Britt soon after the accident, who found him in a dazed condition, with the scalp wounded as described, but with no depression of the skull. I saw him on the following morning, sixteen hours after the accident, and found him presenting all the evidences of compression of the brain; the right pupil was dilated and irresponsive to light; the left normal and responsive to light The skin was hot and covered with a profuse perspiration; the pulse slow, forty per minute and irregular; the respiration stertorous. During the night, the man's sister told me that he had had spasms of the left arm and leg, but that now these limbs were completely paralyzed, and the right was gradually becoming so. This, to my mind, was important, as it showed that compression was gradually taking place, involving one structure after another; and if something was not done immediately, death would result soon, or if not death, a permanent disorganization of brain-tissue with its results, which are worse than death.

My diagnosis was hemorrhagic clot pressing on the arm and leg center on the right side of the brain, possibly caused by fracture of the inner table of the skull, cutting the meningeal artery; and, as the man was sinking gradually, I advised opening the skull—not trephining, but raising a piece of the skull, after the manner of Wolfe, Horsley, and others. It took very little chloroform to affect the patient. I cut through the scalp down to the skull; then with a brad-awl, such as is used by carpenters, I cut holes in the skull over the line in which I intended using my chisel, in this manner:



a. Perforations made in the skull in the line of opening.

It is surprising how rapidly one can use the awl and make the openings, which weakens the line of incision so much that the chiselling is not difficult, as the bone readily gives way between the points of opening. Having raised the skull I found a large blood-clot, and the middle meningeal artery bleeding profusely. After turning out the clot, I tied the artery; then, upon examining the inner table of the skull, I found it fractured, and that a spicule of bone had been the cause of the trouble by cutting the artery. I removed some, and replaced other pieces, for the fracture was a stellate one, and was ready to replace the bone that had been raised up, but, in examining the broken, or under part of the hinge of bone, which is always broken by raising the piece of skull, and in passing my finger along the break, I found that a spicule of bone had been broken off by raising the piece, and had cut through and was pressing on the brain-tissue. I removed this, for there was ample room, and there would have been no excuse for leaving anything unfinished, and stopped the bleeding with styptic cotton. Then washing the wound thoroughly with hot water, I permanently closed it. Twenty-four hours afterward the man was sitting on the side of the bed with his trousers on, and he said that with the exception of the headache he felt well and did not see any use in staying in bed. I advised him to stay in bed for a few days, which he did. At no time after the operation did he have a temperature of over 100° F., and two weeks later he was on the

streets and able to attend the trial of the man who struck him. He is now working on the railroad, perfectly well. In this case, it was utterly impossible to use any antiseptic precautions, as the man lived in a hut surrounded by the filthiest of people—four of them living in the same room, all cooking, eating, and sleeping, in one apartment. The bed he was lying on was a feather-tick that had been brought from Russia with him; and for dirt, I never saw anything to equal it. They would not allow us to remove him to the hospital, so I was forced to do the best possible. I used plenty of hot water, but no other aseptic. Yet, as stated, this man's temperature never went over 100° F.

ACETANILID AS A DRESSING FOR WOUNDS.

BY FRANCIS W. HARRELL, M.D.,
OF GILMAN, WASH.

As surgeon-in-charge of the Seattle Coal and Iron Company's mines at this place, and having to treat a great number of burns, scalds, contused and lacerated wounds into which coal-dust, ashes, iron-filings, grease, and dirt of every kind have been thoroughly ground, and finding none of our present dressings equal to preventing suppuration in these cases, I have naturally been searching for some means of making these wounds aseptic and keeping them so—some dressing that would prevent sepsis, and kill germs by contact. I think I have found what I wanted in acetanilid in the form of a powder. Reasoning in my own mind that many of the coal-tar derivatives have germicidal properties, and being struck by the non-hygroscopic properties of acetanilid, I began experimenting with it as a dressing for wounds.

The first case in which I tried it was an extensive laceration of the skin and muscles of the lower arm and forearm in a boy of nineteen. There were two wounds, one on the upper surface of the lower arm, an inch by two inches in extent, and one on the under surface of the forearm, an inch by two and one-half inches in extent. After carefully washing these surfaces with warm water, I applied pulverized acetanilid; the next morning I examined the wounds and found no pus, and then applied more acetanilid. The same result was observed each time I examined the wounds, and I also noted that they were growing perceptibly smaller. After a week the boy went off on a fishing excursion and I did not see him for a week. The dressings had not been changed during this time, but the wound on the forearm had healed, while the one on the arm was not larger than a dime. I applied a fresh dressing, and healing was complete in about a week. At no time was there any show of pus in these wounds. The young man called my attention to the fact that the dressing when first applied "was a little peppery," as he expressed it, but that in ten minutes all pain had disappeared.

The same effect has been noted in every case in which acetanilid has been used, clearly showing that it has local anesthetic powers. I have treated similar injuries with iodoform, boric acid, carbolic acid solutions, and with bichlorid solutions and gauze, but I have never succeeded in curing them without the formation of pus. Since then I have used acetanilid in the treatment of every case I have had in which there was extensive loss of tissue, and in every case it has acted well, the usual result being no pus and rapid recovery. I have not been able to use it in any major operations, as, fortunately, we have had no very severe accidents here for the last two months. My method of treatment has been cleanliness, with the application of finely powdered acetanilid to the wound. Apply plenty of it; in fact, for a crushed finger I make a bed of acetanilid.

Not being a practical chemist myself, and not having a hospital at hand where I can carry on extensive investigation, never having seen anything written on this subject, and being impressed with the cheapness of this substance, its lightness, its bland, non-irritating qualities when applied to abraded and wounded surfaces, I make this communication to call the attention of the profession to the value of acetanilid and to get someone who has more opportunities than I have to investigate it. I have found acetanilid a dry dressing that does not scald the skin, as does boric acid; does not have an offensive odor, as does iodoform; will never poison by absorption, as does sometimes carbolic acid or mercuric chlorid solution, or gauze.

MEDICAL PROGRESS.

Secondary Post-partum Hemorrhage.—At the last meeting of the Colorado State Medical Society, DR. JOHN T. DAVISON reported the case of a primipara, twenty-nine years old, who was delivered of twins at about the eighth month of pregnancy, being attended by a midwife. The children were syphilitic in appearance; one died twenty-eight hours, the other nineteen days after birth. The mother was up, engaged in her by no means light household duties, five days after the labor. She attended the funeral of the second child, riding some miles in an open wagon. Three weeks after delivery the woman was seized with profuse uterine hemorrhage. She was found lying upon the bed, quite pale and anxious. Her clothing and the bedding beneath her were saturated with blood. There was not even hot water in the house, and no attendant save a neighbor who had chanced in.

Bimanual examination showed the uterus well contracted, of the usual size for the period elapsing after delivery, and occupying the natural position. Upon introducing a duck-bill speculum, blood was seen issuing freely from the os. At this juncture the patient became quite blanched, sweat appearing on the forehead, and the pupils dilating. The emergency being pressing, the vagina was tamponed with the first accessible substance—a new, clean sheep's-wool sponge of about two ounces in weight. This was torn into shreds, soaked in a one to six solution of ferric chlorid, and introduced until the introitus was reached. In spite of this, considerable oozing from the orifice continued. This was subsequently thought to be due to the patient's previously anemic condition, or possibly to a hemophilic tendency. The oozing continued for about an hour, finally ceasing. Fluid extract of ergot was given in dram-doses every four hours for a few days, quinin, iron, and a liberal diet prescribed, caution enjoined as to the use of hot liquids, and small quantities of stimulants allowed. The tampon was removed thirty-six hours after its introduction; vaginal irrigations of mercuric chlorid, 1 : 3000, and carbolic acid, 1 : 50 (to destroy fetor), were employed. The tam-

poning with absorbent cotton and the irrigations were repeated daily for about one week; then discontinued. Nine days after the first profuse hemorrhage the woman concluded to sit up in a chair, when a second, but a lighter hemorrhage took place. Tamponing was again resorted to with success, as far as immediate control of the hemorrhage was concerned, but any attempt to discontinue the use of the tampons was followed, on slight exertion, by hemorrhage, so that their use was continued daily for some weeks. An inspection of the os, made previously to the introduction of the tampons, disclosed the existence of a bad laceration, but any attempt to ascertain the precise location of the torn artery resulted in the loss of a large amount of biood. In view of this, and of the patient's weakened condition, tamponing alone was relied upon to control the hemorrhages, and, as the sequel shows, with success.

Perhaps four weeks after the first hemorrhage, a semiglobular body was observed protruding at the os externum. This suggested partial inversion of the uterus, or a polypus. Its spontaneous disappearance after some weeks supported the former assumption. Under roborant treatment, with rest in bed and a liberal diet, the patient's general health and strength gradually improved, and she was soon allowed to get up, finally recovering fully and gaining many pounds in weight. About sixteen months after her first confinement the woman was delivered of a large male child, when the cervical scar could be easily felt by the examining finger, incidentally verifying the previous diagnosis of hemorrhage due to laceration of the cervical artery.

Sigmoiditis.—Mayor (*La Semaine Médicale*, 1893, No. 46) has observed a condition of inflammation of the sigmoid flexure of the colon giving rise to symptoms analogous to those of typhlitis and perityphlitis. Constipation appears to play the principal rôle in the etiology of the affection, either mechanically or as a result of the absorption of toxic matters. The inflammatory process may be limited to the walls of the intestine proper, constituting sigmoiditis; or it may extend to adjacent structures, giving rise to a local peritonitis, and constituting perisigmoiditis. The principal and most characteristic symptom consists in the presence of a painful movable tumor in the left iliac fossa. In cases in which the inflammatory process is limited to the coats of the bowel the tumor is cylindric in shape and of considerable size, being lost below in the pelvic cavity and being continuous above with the descending colon. This swelling may be mistaken for the cord described as present in cases of enteroptosis; for an iliac phlegmon or adenitis; for simple gastro-colic dilatation; and for muco-membranous colitis. The sigmoid cord of enteroptosis is of smaller volume and more perfectly cylindric; it is also characterized by hardness and retraction. Inflammation of the iliac glands is attended with dulness upon percussion, while a certain degree of resonance usually persists in case of sigmoiditis. An iliac phlegmon is to be differentiated from an iliac peritonitis by the fact that the swelling of the latter is bosselated, not flat on percussion, and does not extend to the abdominal walls or to the pubic arch. In case of simultaneous dilatation of the stomach and sigmoid flexure, inflammatory symptoms are absent. Cases of muco-membranous colitis are usually associated with hysteria or neurasthenia and present pain and induration in the left iliac fossa; the mass present is band-like, and there is an absence of inflammatory symptoms, while the stools are characteristic. Patients affected with iliac enteritis sometimes, but not always, present fever. They are often emaciated, with coated tongue and anorexia. The stools are irregular and scybalous. The condition is curable, although sometimes obstinate. Should pus form it will require evacuation. Under all circumstances the patient should be put to bed and restricted to a liquid or semiliquid diet; occasional doses of castor-oil may be given; a copious enema is to be administered on alternate days; cataplasms may be applied over the painful region, and possibly mercurial ointment; tincture of iodin and a flannel bandage may also be applied.

"The Metapore (Foramen of Magendie) in Man and an Orang" is the title of a paper presented to the American Neurological Association, July, 1893, by Professor Burt G. Wilder, M.D., which was designed:

First. To call attention to the existence of at least two varieties of the metapore, viz., one in which the metaplexuses barely project at the margin, the other in which they extend for some distance upon the cerebellum.

Second. To record the discovery by the author of the metapore in an adult orang and in three Old World monkeys. In the former there are several orifices in the metatela.

Third. To admit the unsatisfactory state of our knowledge as to the structure and relations of the parts and cavities involved, and as to the functions of the arrangement.

Of the ten special questions asked in the paper, nine are discussed more or less fully in the *Reference Handbook of the Medical Sciences*, Supplement, 1893, pp. 615, 616, the tenth is as follows:

10. *Does the metapore represent an evagination of the metacelian endyma?* This is suggested as an alternative to the usual view of perforation, by Professor C. S. Minot (in a manuscript communication to Professor Wilder, dated July 17, 1893), who says: "The passage from my *Human Embryology*, quoted by Dr. Wilder in the *Reference Handbook of the Medical Sciences*, Supplement, p. 613, is not intended to throw any doubt on the existence of the foramen of Magendie or metapore. . . . It is an opening through the roof of the fourth ventricle. There are two possibilities: Either it is a break in the epithelium, or it is the orifice of an evagination." Dr. Minot does not state at what period the evagination hypothesis occurred to him; it is not even hinted at in his *Embryology*, in which, indeed, on page 676, the very existence of the metapore seems to be ignored. Hence, Dr. Wilder holds that any misapprehension on his part as to the actual nature of Professor Minot's views is due to the summary and inadequate treatment of the roof of the fourth ventricle, already commented upon in Dr. Wilder's review of the book in *The Nation*, May 11, 1893.

A Case of Leprosy resembling Morvan's Disease.—At a recent meeting of the Société Médicale des Hôpitaux, Debove (*La Médecine Moderne*, 1893, No. 60, p. 758) presented a man, fifty-one years old, who fourteen years

previously had a whitlow upon the palmar aspect of the right thumb, incision of which was unattended with pain. For a number of years successive whitlows recurred in the same situation, which, though painful at first, subsequently became insensitive. There was, however, no necrosis of bone. In the course of time the right hand became contracted, claw-like, with a deviation to the ulnar aspect, and atrophy of the muscles of the thenar eminence. Common sensibility was preserved, but thermal and painful sensibility were lost on the right forearm up to the elbow. Morvan's disease was at first thought of, but subsequently a diagnosis of leprosy was made. It was learned that the man had lived in Mexico, and on investigation neuromata were found in various parts of the body. From the data obtained, the disease must have had a period of incubation of fifteen years.

Acute Parenchymatous Nephritis following Varicella.—CASSEL (*Deutsche medicin. Wochenschr.*, 1893, No. 32, p. 769) has reported the case of a girl, four years old, who had previously never suffered with any infectious disease, but who upon the sixth day of a febrile illness presented a typical varicellous eruption. The urine at this time contained no albumin, but nine days later, when she was brought on account of a swelling of the face and diminished renal secretion, the urine contained blood, albumin, and granular and epithelial tube-casts. In the following days the condition of affairs progressively improved and so continued to do until the child was lost from view.

THERAPEUTIC NOTES.

Theobromin for Cardiac Dropsy.—At a recent meeting of the Paris Academy of Medicine, GERMAIN SÉE (*Allg. med. Centralzeit.*; *Wiener med. Pr.*, 1893, No. 34, p. 441) reported excellent results from the employment of theobromin in the treatment of grave cases of cardiac dropsy. Theobromin, like caffein, belongs to the group of xanthins, which are closely related to uric acid. Theobromin is dimethyl-xanthin, while caffein is trimethyl-xanthin. Theobromin was administered in daily doses of from 45 to 75 grains for three days successively, with excellent results. The amount of urine was increased at once and the diuresis subsequently became still greater. The drug was employed in cases of cardiac dropsy, valvular or myocardial in origin, independently of whether ascites coëxisted or not. It proved inefficacious in cases of ascites dependent upon nephritis. Theobromin has the advantages over other diuretics, such as digitalin, caffein, calomel, milk, and milk-sugar, that its use is unattended with unpleasant result of any kind, that its action is more certain, and further, that the ordinary diet is not interfered with. The use of so-called theobromin sodio-salicylate is cautioned against, which is said to be only a mixture of theobromin and sodium salicylate.

A Remedy for Dysentery.—MIXON (*Texas Sanitarian*, vol. ii, No. 10, p. 414) recommends choparro amargoso, a small thorny bush that grows in Southwest Texas, in the treatment of dysentery. The bush belongs to the natural order Simarubaceæ, which also includes quassia and simaruba. All parts of the bush possess medicinal virtue, except old stock. The bark, leaves, thorns, flowers, and fruit, all have an intensely bitter and characteristic taste. The tendrils contain the active principle in greatest proportion and are generally selected for pharmaceutic purposes. The plant yields its virtues to boiling water, in the proportion of from two to four ounces to the gallon. The dose of the fluid extract is from ten minims to half an ounce as a tonic, from three drams to an ounce as a stimulant. Large doses cause flushing of the face and fulness of the head. The odor of the drug can be detected in the urine, although no appreciable effect upon the renal secretion has been observed. The drug has some antiperiodic properties, which might make it a desirable remedy in the treatment of malarial dysentery. The active principle upon which the properties of the drug are supposed to depend has not yet been isolated.

Aconitin Nitrate in the Treatment of Erysipelas.—At the recent Congress of the French Society for the Advancement of Science, TISON (*La Médecine Moderne*, 1893, No. 65, p. 822) reported the employment of aconitin nitrate in the treatment of some twenty cases of erysipelas, with the result in every instance of diminishing the pain and shortening the duration of the attack. Complications developed in but two cases, inflammation of the knee-joint developing in one, and an abscess of the temple in the other. The alkaloid was dissolved in a mixture of water, glycerin, and alcohol, having the density of distilled water, in such proportion that each fifteen minims contained one-seventh of a grain. The dose ordinarily employed was one-three-hundredth of a grain.

For Dysentery.—

℞.—Salol. . . . . gr. xxiv.
Sodii bicarbonat. . . . . ʒss.
Essentiæ canellæ . . . . gtt. v.
Mucilaginis acaciæ . . . ʒjss.
Ol. ricini . . . . . ʒiv.
Aquæ chloroformi . . . . ʒvj.—M.

S.—Two teaspoonfuls every three hours.

Rif. Med.; *Münch. med. Wochenschr.*, No. 33.

For Alopecia.—

℞.—Ol. cinnamomi . . . . mxx.
Ætheris . . . . . fʒj.—M.

S.—Paint once daily. The hair should be cut short and washing the head should be abstained from. From three to four weeks on an average are required to accomplish good results.

Centralbl. f. d. ges. Ther., No. 7; *Corr.-bl. f. Schw. Aerzte*, No. 16.

For Acute Articular Rheumatism.—

℞.—Acid. salicylic. . . . . ʒjss.
Alcohol. absolut. . . . fʒj.
Olei ricini . . . . . fʒij.—M.

S.—Apply topically morning and evening by means of saturated compresses, covered by an impermeable dressing and held in place by a flannel bandage.

RUEL, *Rev. Méd. de la Suisse Rom.*, 1893, No. 8, p. 484.

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ABOUT CORONERS.

The office of Coroner is of great antiquity, and exhibits in common with other judicial offices the complex and unnecessary forms of procedure that characterized the jurisprudence of the middle ages. No doubt, in days when pathology was non-existent, violence common, and the practice of medicine carried on without organization or ethical control, it was imperatively necessary that some constituted authority, possessing compulsory process for witnesses and broad jurisdiction, should pass judgment on any cases of suspicious or obscure death. In the present state of medical science, however, the office is an anachronism, and in the corrupt politics of our larger cities is in constant danger of either abuse or neglect. It is true that since the revenues, regular or extortionate, are not usually large, and the functions of the office concern directly but a limited portion of the community, there is rarely any public discussion on the matter, but the opportunity for reform exists none the less.

At the present time considerable attention is being attracted to New York City, where, largely through efforts of the *New York Herald*, an extended exposure of Coroners' methods is being made. The agitation has resulted in a formal presentment by the Grand Jury, charging the Coroners with dereliction of duty, and advising that at the formal revision of the State Constitution, to be made shortly, the office of Coroner be abolished.

Some years ago an analogous newspaper exposure was made in Philadelphia, though the maladministration related almost entirely to questions of finance, and did not lead to suggestions of radical reform. Some years subsequently The Medical News had occasion to severely animadvert upon methods prevailing in the same office in regard to the distribution of unclaimed dead, but this was remedied by the passage of the Anatomical Act.

The abuses in the New York offices (for the city has several Coroners) have been of long standing, and involve not only the despatch of business, instances of flagrant delay having occurred, but irregularities in the summoning of witnesses and in making returns to the police authorities. In Philadelphia the office has of late years been administered satisfactorily, although occasionally individual members of the medical profession have been not very kindly treated. The truth must be confessed, however, that more errors have been committed in Philadelphia by medical than by lay incumbents.

The office of Coroner is one of much greater local power than is generally supposed. It has not much patronage or social weight, but the transportation companies are usually careful to maintain friendly relations with it. A Coroner has much control over his own juries; the character of a verdict in a case of railroad accident may be of much importance in subsequent legal proceedings. Then, investigations into suspicious deaths may be pushed with vigor or be allowed to fail.

Agitation which results only in securing more efficient and honest management of the office fails to do its best. The whole system should be remodelled. The finding of a Coroner's jury is an entirely unnecessary preliminary. It is not regarded in the subsequent judicial proceedings, and many grave criminal cases are tried without any such verdict. By far the larger proportion of inquests passed upon are matters of simple routine, the cause of death being patent, while in the obscure cases the jury and even the Coroner are compelled to rely upon the testimony of experts. These experts would be equally competent to pass judgment in the simpler cases.

The Massachusetts law exemplifies the direction that reform should take. The antiquated methods of inquest and verdict are done away with; com-

petent local officials, termed medical examiners, who must be graduates in medicine, view the bodies, and, in the event of inability to determine the cause of death or of suspicion as to criminal acts, refer the inquiry to experts or to the prosecuting authorities.

The organization of local and State boards of health and the appointment of health-officers, with powers to supervise interment and to require competent certificates of death, are also conditions which render the Coroner's inquest unnecessary. It matters but little as to the title given the official who is charged with the duty of ascertaining the cause of any sudden or violent death. In Massachusetts he is called a medical examiner; he might be called a registrar or a coroner; the important point is to shake off from our procedure the absurdity of the inquest by a jury made up often of the political idlers who may be about the office and representing no social, medical, or legal constituency, dependent for their appointment on the head of the office, and in most cases forming their judgment solely on the suggestion of the experts. Questions of responsibility for murder by deliberation or neglect can be fully settled by the public prosecutor.

One point in which there is great need of increased efficiency in Coroners' inquiries is in reference to death from poison. There is little doubt that both criminal and accidental poisoning is more common than is apprehended by the public at large. Not only are many cases of this kind so obscure or so simulative of disease that no suspicion is aroused, but the methods of procedure often involve such expense that the officials are unable or unwilling to undertake investigation. Expert witnesses receive so little consideration from the courts, are put to such unnecessary inconvenience by delays in trials, that it becomes necessary for them to ask fees sufficiently large to protect themselves from absolute loss. County authorities are often unwilling to pay such fees unless it is very apparent that a successful prosecution will justify the outlay. It would be a great advantage if some systematic method of inquiry could be devised by which more frequent preliminary examinations could be made. In the sparsely settled counties it is often very difficult to get the county commissioners to authorize any unusual expenditure for analytic work, and it sometimes happens that to secure such investigations private parties, relatives of the deceased, are obliged to guarantee payment.

It is to be hoped that some day a collegiate course leading to a thorough knowledge of sanitary science and State medicine, not as a mere accessory of medicine, but as an independent degree, will be inaugurated in one of our large cities, and that the valuable material for practical instruction which the Coroner's office in such a city furnishes will be utilized in the teaching.

HIGHER MEDICAL EDUCATION.

PROFESSOR DA COSTA'S timely, earnest, and eloquent address before the Harvard Medical Alumni Association, published in THE MEDICAL NEWS of September 23d, challenges comment on several important points. We shall speak of but three of these: 1st. Preliminary training; 2d. Examinations; 3d. The university idea.

As to preliminary training, DR. DA COSTA is at one with PROVOST PEPPER and PRESIDENT ELIOT in advocating a shortening of the collegiate course in arts, if it is desired that medical students should have the training and the degree of such a course.

The University of Pennsylvania has made such a concession; and we trust that all other American universities will soon do the same.

DR. DA COSTA recognizes, however, that under existing conditions in America many men who have never entered college may be properly qualified to study medicine, and, while approving of the four years' course, he insists upon the importance of reforming medical education, not so much in the direction of lengthening the course as in securing a proper foundation, whether in or out of a college or academy. This is the position THE NEWS has steadily maintained. A man properly qualified in biology, in chemistry, and in physics can learn more in three years at a good medical school than the average student of the day, even at Harvard, can learn in five years. Begin at the beginning, then the rest will come. It is not in practical skill in medicine or surgery that American physicians are deficient, but in exact scientific knowledge. It is for this reason that, despite our LEIDYS and our DRAPERS, we have proportionately fewer great names in the sciences than in the arts of medicine, and that most of our ambitious graduates are compelled to go abroad for technical training. Increasing the number of medical students with degrees in arts will not of itself remedy this defect. We need scientific preparation. The kindergarten chemistry now taught to senior stu-

dents in many medical colleges is far less than the student ought to know before he is admitted. There is no preliminary training in biology now demanded —nor is general biology taught, except incidentally and accidentally. Yet how can human anatomy or human physiology be understood without it? As to physics, let anyone attempt to get an explanation of such simple matters as the siphon or the cupping-glass from some of the men and women to whom learned discourses on blood-pressure are to be delivered, and he will hear theories that would have amazed, rather than delighted, Pascal or Toricelli.

Dr. Da Costa does not approve of multitudinous and incessant examinations. "Why must you always pull up the student by the roots to see whether he is growing?" "We do not want to turn out medical prize oxen, stuffed and fattened for examination, but medical men, with thought, with power, with intelligence, with love of work, and of orginal investigation." There is nothing to be added to this. But it takes good teaching to turn out thinking men, while any dunderhead, with the aid of a quiz-compend, can stuff medical oxen, geese, or dummies for examination. We are afraid the examination-system will continue until we get gardeners who have sufficient confidence in themselves and in their methods to let their plants grow undisturbed.

In his remarks upon the useless multiplicity of colleges, the Harvard orator went to the root of the whole matter. So long as medical education is a business, carried on by private individuals for personal gain, whether gain in money, gain in notoriety, or gain in consultation-practice, so long will there be an insufficient preliminary standard, with its inevitable sequelæ of kindergarten lectures, cram-books, and examinations. There should be ample endowment for every medical chair, with its necessary adjuncts of laboratories and hospital beds, and the work should be done not by one lecturer, but by a large staff of able teachers with comparatively small classes. There should be no insane jealousies and envious repression of rising men, but everybody with the ability and the desire to teach should be given the opportunity, and from among those who do the best work should the promotions be made. This, as a rule, means no medical school apart from a great university, because, generally speaking, only such a university can obtain the necessary endowment; and because, moreover, several adequate and rival endowments of indispensable laboratories cannot be obtained in the same city, hardly in the same State. The time is not yet ripe, however, for so radical a measure. A gradual approach to it can be made by consolidation, as has been done in Chicago and New York within recent years.

Where consolidation is impracticable—where for instance a great school not connected with a university has glorious memories and traditions, as, for example, the Jefferson Medical College of Philadelphia—coöperation is not impossible, on some such plan as was suggested by Provost Pepper at a dinner of the Jefferson alumni. Let medical students who come to Philadelphia, said Dr. Pepper in effect, attend lectures where they will—at the University, at the Jefferson, at the Medico-Chirurgical College, or the Woman's Medical College. Let all the laboratory and hospital facilities be open to them. Let them be students of the medical faculties of Philadelphia, and let them, by having choice of teachers, stimulate the teachers to generous rivalry. Something like this seems to be the thought, too, of Dr. Da Costa, when he says: "The future of medicine lies in the universities and in such great schools as can vie with them in clinical and other facilities."

If the undergraduate and post-graduate schools of cities like Philadelphia choose to overlook mere personal interests, they have it in their power to give, by their coöperation, the greatest impulse of the century to Higher Medical Education in America.

EDITORIAL COMMENTS.

Powers of Boards of Health to Deal with Nuisances.—Several important questions have been decided by the General Term of the Supreme Court of New York in the case of the Board of Health of the City of Yonkers *v.* Copcutt (24 N. Y. Supp. 625). The testimony in this action disclosed the existence of an intolerable nuisance in the heart of that city of 30,000 inhabitants. Environed by dwellings in close proximity to its shore, there has been for many years maintained a mill-pond whose bed is covered to the depth of seven feet with foul sediment, impregnated with offscourings and putrid substances, covered at times with polluted water, and at times bare, giving off noxious, offensive, and sickening odors, which endangered the lives and health of the people. It also showed that the only effective way to abate the nuisance was to destroy the dam and enjoin the rebuilding of any obstruction to the running current of the water. The remedy of the Board of Health was, therefore, said the Court, to abate and remove the nuisance, if one existed, and charge the expense upon the owner of the land—not to order him to do it and impose a penalty for failure

to do so. However, under a statute authorizing the Board of Health to establish such regulations as might be necessary to carry into effect the powers of said Board, and to enforce observance of its sanitary code by imposing penalties, the Board could maintain an action for a penalty and injunction against the person who maintained the dam, it being declared by one section of the Board's code that anything dangerous to public health was a nuisance, and that one who supported it was guilty of violating the section, and a penalty being prescribed by another section for any violation of the code or any ordinance or resolution of the Board. But when the Board, without notice to the person to be affected, passed a resolution requiring the removal of the dam, the penalty for disobedience of the resolution could not be enforced. The fact that others beside the owner contributed to it, and even the city of Yonkers itself, by discharging sewer matter into it, did not relieve the owner of the dam from responsibility for its condition, for it was his act in maintaining the dam that kept the foul substances confined in the pond. It was also objected on the part of the owner that the Board had no power to prohibit the rebuilding of the dam and thereby prevent a nuisance, but that the Board must wait until it was rebuilt and then adjudge it a nuisance. It might as well be said that the Board could not prohibit a load of cholera-infected clothing from coming into the city, but must wait its arrival before taking measures to abate the nuisance. It was simply a means taken to prevent the increase or renewal of what had already been adjudged a nuisance dangerous to life and health. Besides, the penalty could be collected by it for violation of the resolution of the Board prohibiting the rebuilding of the dam.

Abstracting from the French as She are Done.—To make a useful and trustworthy abstract of a medical article requires a high degree of intelligence, both literary and medical, and also a great conscientiousness. One who is conversant with the originals and who is experienced in such work is frequently disgusted or amused by the slipshod quality of a large part of the "abstracting" served up by medical journals for the delight and profit of their readers. As an illustrative instance there recently appeared in a monthly medical magazine of great dignity, and with claims to *international* recognition, an abstract of an article on "Syphilis of the Liver," epitomized from the *Revue mensuelle des Maladies de l'Enfance* for January, 1893. The final sentence of the original reads:

"Dans la suite, le foie diminua considérablement de volume, au point que deux mois plus tard, il fallait le chercher sous les fausses côtes. Mais en Novembre, 1891, apparurent des gommes frontales qui vinrent prouver la nature syphilitique de la lésion."

The translator thus renders the last sentence: "About four months after operation syphilis was suggested *by the appearance of the gums!*" We are sincerely grateful for the medical abstractor's ignorance that the French word *gommes* also means *gummata*. Why did he not say. *frontal gums?* Where, also, was Mr. Editor, and what was he about?

Yellow Discoloration of Hands and Feet in Enteric Fever.—Filipovich, of Odessa, notes as diagnostic of enteric fever a peculiar yellow or orange discoloration of the prominent portions of the palmar and plantar surfaces which in health usually display a pink tint. He attributes this discoloration to the enfeebled action of the heart, the incomplete filling of the capillaries, and the dryness of the skin. Filipovich found the sign constant and marked. In Philadelphia this sign has long been known to many physicians, whose attention was called to it by the late Dr. Ellwood Wilson. A valued collaborator informs us that at the Philadelphia Hospital, some two years ago, he examined the hands and feet of every fever patient in the house during a number of weeks, and found the sign present in every case of enteric fever, and, with the exception of one case of acute tuberculosis and one of acute pneumonia, absent from other cases of febrile diseases. In neither of these exceptional instances was the discoloration so marked as in the enteric cases. It is not, however, invariably well marked, even in enteric fever. The actual state of the case seems to be that the sign, while not pathognomonic, is interesting, and should count with others in making a diagnosis.

Declarations of Wounded Persons.—The declarations of a person who has been wounded, respecting the circumstances under which the wound was inflicted, are admissible in prosecutions for the killing of such person, if made at a time when he did not expect to survive the injury and all hope of recovery had been supplanted by the conviction that he would certainly die. The time when made need not be when the declarant apprehended immediate dissolution; but the declarations are admissible if made at any time when he believed that death was impending and certain. So holds the Supreme Court of Arkansas in the case of Evans *v.* State (22 S. W. Rep. 1026). It is within the province of the court to hear the circumstances under which the declarations were made and to determine whether or not they are admissible; but after they are admitted it is within the province of the jury to weigh them and the circumstances under which they were made, and give to them only such credit, upon the whole evidence, as they may think they deserve.

The Abuse of Medical Charities.—The British Medical Association has inaugurated a determined fight against the abuse of medical charities in Great Britain, and as a means to that end its committee recommends (1) that a wage-limit be established above which income persons applying for treatment will be required to pay fees; and (2) that the hospitals and dispensaries hereafter have displayed in a conspicuous place within their precincts a placard bearing the following inscription: "This institution being established to relieve only those persons who are too poor to pay for suitable medical aid, notice is hereby given that on and after this date patients will be required to give information as to their means and circumstances, with a view to prevent the abuse of this charity by persons who are well able to pay." Cannot American hospital authorities be moved to "go and do likewise?"

Admissible Expert Evidence as to Death and Nature of Blood-spots.—It is not error, holds the Supreme Court of Pennsylvania, in the case of Commonwealth *v.* Cross-

mire (27 At. Rep. 41), to permit a physician, after describing on a murder trial the injuries found on the body of the deceased, to state what, in his opinion, caused death, and how the injuries upon the person were inflicted. Nor is it error to admit in evidence his testimony to the effect that certain spots on the clothing of the person accused of the murder are blood-spots.

Honor to American Medical Investigation.—We are glad to learn that the excellent and valuable article of Professor Vaughan on "The Principles of Immunity and Cure in the Infectious Diseases," concluded in this number of The Medical News, has, in advance of its complete publication, attracted some of the recognition it so well deserves, both in our own country and abroad. Dr. S. Pozzi, of Paris, has obtained the privilege of translating the address into French. We congratulate Dr. Vaughan and American medicine.

SELECTION.

STANLEY'S TRIBUTE TO SURGEON-MAJOR PARKE.

"Himself depleted in body from excessive perspiration after a march through hot, moist jungles, starving on one green banana a day, half-naked from loss of clothing and the constant wear and tear of bush-life, half fainting from the pernicious ague, which could only be suppressed by heroic doses of quinin, and yet presenting to each and all of us a face whereon one read naught but pleasantness and benevolence. Pursuing steadily, day by day, throughout a period which has no equal in my life for downright utter and extreme misery, an even temper so admirable and beautiful for its sweetness and devotion, that I can think no human being, male or female, could excel it. It is here, in the possession of these natural gifts, this charming benignity, that I think Parke is great. Oh! at such a time had the ordinary human creature stood up and freed the pent-up feelings with a shout of blasphemy and explosive fury, we could not have remembered it as a sin against poor, weak, overpressed human nature; but never within my hearing or knowledge did I hear a murmur or a mean expression. That singular sweetness and tender anxiousness, having been noted by me so often when he sat in the midst of his patients unsuspecting, remain stamped on my mental image of Parke, and calling him now up to my mind I can see nothing else but that. The 'Doctori,' as the Zanzibaris called him, was to them a friend to whom they might expose their constant and ever-recurring ailments, for no one but one who was sincerely friendly could look as he did, or speak so soothingly and comfortingly.

"After his short rest he would be seen striding across the camp, always erect, vigorous, and soldierly, going from hut to hut, apparently thinking of nothing in the world but the condition of a patient he had just seen, and presently he would be bending down over another bad case with a new face and eyes which glowed with glad promise of recovery to him. The chronometer was not so faithful to Greenwich time as our doctor to his duties. No person reminded him of them; the warm interest he took in his noble profession and his own faithful, humble, and upright heart were quite sufficient. The fate of the expedition—the prospects of getting food the next day, the whereabouts of Emin or anybody else—did not appear to have that importance for him as to how Juma or Ali or Sungoro was doing. The thoughts of impending starvation and calamitous forebodings had to yield to those which included his own immediate responsibilities."—Henry M. Stanley, in the *Lancet*, September 23, 1893.

REVIEWS.

A Dictionary of Medical Science: containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Bacteriology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, etc. By Robley Dunglison, M.D., LL.D. Twenty-first edition, thoroughly revised and greatly enlarged, with the Pronunciation, Accentuation, and Derivation of the terms, by Richard J. Dunglison, A.M., M.D. Philadelphia: Lea Brothers & Co., 1893.

If hereafter physicians err in matters pertaining to medical lexicography it will certainly be their own fault. From the press of the present and of late years has been poured a steady stream of excellent books, from the splendid works of Foster and the Sydenham Society to those of Billings, Keating, Thomas, and others. Throughout all these years the fine old volume of Dunglison has kept its place, despite needed revision long delayed, as a classic and reliable helper of the practical and literary physician in his struggles with the thorny subject of medical nomenclature. At last the scholarly son of the great lexicographer has felt the challenges of many rivals and has put his own hand to a revision of the father's handiwork, seeking to bring to it the almost riotous wealth in the fields of new word-coinages and medical progress that has accumulated in the years since the last edition.

Few know or can even faintly realize the labor that such a resolution necessitates upon the part of the conscientious man. . The verification of the mere form of a word, a date, an etymology, or a definition may mean an hour or hours of search, letters to half a dozen scientists, and perhaps at last doubt and disappointment. The delver in these dark fields surely deserves a far greater reward, both in gratitude and in hard cash, than he will ever receive. He must be content to go on his toilsome way, cheered only by the thought that conscientious work somehow brings its own reward, and that thousands of minds will be a little clearer and better as a result, direct or indirect, of his years of patient and fatiguing work. For there is a deep and widespread educational value attached to this dictionary work that few recognize. The medical profession owes Robley Dunglison a great debt for clarifying and definitizing the minds and concepts of many thousands of its younger men, for sparing young and old much intellectual vagueness, much misuse of its greatest profes-

sional tool or instrument, and much loss of labor and of time. In the face of such labor, criticism must be motived by the best kindness; it is impossible to carry out such a huge undertaking without numerous omissions and the creeping in of errors, and all reviews should be written with the idea of leading to the correction and improvement of future editions, or of warning the public against mistakes so long as they must remain uncorrected. Moreover, in the mind of the critic there must rise the thought of the interminable and exasperating differences of opinion among the best philologists pertaining to almost every word that one has to decide about.

Although thus minded, we must nevertheless remember the sharp limits of our space which prevent even mention of the many and most excellent things that might and should be enumerated. These must "go without saying," and only a few minor points noted wherein we differ from Dr. Dunglison.

The most astonishing mistake made is not printing Greek etymologic terms in the Greek characters. Epsilon can thus not be distinguished from Eta, nor Omega from Omikron. Every consideration, scholarly, literary, or scientific rebels against the plan pursued. But when decided upon, a definite rule should have been followed; the Greek letter Upsilon, for example, should have been uniformly represented either by the English *u* or by *y*, and not haphazard by either, as, *e. g.*, *pharynx* or *pharunx*. Moreover, the plan makes it impossible to say from what language the word is derived, whether from the Latin or the Greek. Then it lands our author in another difficulty, illustrated for example by the derivation of words meaning pus by four different somewhats on the same page: "*pyo*," "*pyon*," "*puon*," and "*puros*."

In pronunciation, of course, the rule, *de gustibus*, holds, but here, too, we should have adherence to *some* rule. We cannot understand why *psych-* is first *sik-*, then *si-*; *hyper-*, first *hi-per-* and then *hip-er-*; *micro-*, first *mik-ro-* and then *mi-kro-*; *gyne-*, first *gi-* and then *gin-* (both, too, wrong, as the proper pronunciation is *jin-*), *phyto-*, first *fi-to-*, then *fit-o-*, *bio*, first *be-o-*, then *bi-o-*, *dia*, first *de-ah-*, then *di-ah-*, etc., alternately and haphazard until one is sadly confused. We sincerely regret to say that the pronunciation throughout is unsatisfactory. It will be long before Dr. Dunglison gets either good or bad speakers to pronounce as he advises, *e. g.*, *pe-a'-me-ah* (pyemia) (why not *sep-te-sa'-me-ah* also?), *kar-e-o-kin-a'-sis* (karyokinesis) *pe'-ah mat'-er* (pia-mater—also strangely translated, "delicate mother"), *em-is-sah'-re-um* (emissarium), etc. A large number of words are not pronounced at all, and the one possible wrong pronunciation is too often chosen. Thus, there are several pages of *hæmas* and *hæmos* all pronounced *he-*. Suddenly we come upon our old friend (or enemy) *hæmorrhage*, and the pronunciation is as suddenly omitted; we are strangely referred to *hemorrhage*, where we get *hem*, and haul up with AHEM! There is a similar history with *hæmorrhoid*, (*he-*), *hæmorrhoids*, (*hem*), *hemorrhoids*, etc. We do not understand the significance of *h* in the phonetic pronunciation of all words with the Greek aspirate, *ῥ*—as, *e. g.*, in all the *-rhages* and *-rheas*.

We think the editor, if adhering to the old spelling, should have been consistent. If *fæces*, why then *defecation?* If all *hæma-*, *hæmo-*, etc., why an exception of *hemorrhage* and *hemorrhoids?* Why, oh! why does the author on the title-page spell *gynecology* and *pediatrics* as here written and stultify himself in the body of the book by spelling these words in the medieval way. It is trifling and absurd to thus "blow hot and cold" at the same time and in the same book. We also think the new spelling of words in chemistry, etc., recommended by so many learned societies, used by so many scientific writers, adopted by so many great lexicons, should at least have been mentioned.

We have noticed a number of minor slips, to which we will not here refer. But we must protest against the identification of *albumen* and *albumin*; even the lay Webster does not make this error. A number of eponymic diseases, such as Darier's, Morand's, Quincke's, Rivolta's, etc., are not to be found; a great many *images* are omitted; erythromelalgia is not a synonym of "*Reynaud's*" disease, nor of *Raynaud's*; Reichmann's disease is not necessarily followed by ulcer; several elements recently discovered are omitted from the table; several knots, all tests of birth and of death; several anesthetics and anesthetic methods (inhalers, Hyderabad, etc.); all of Weissmann's terms as to heredity (id, idant, biophore, determinants, etc.), and a number of hernias are absent. The table of bacteria is very incomplete. Hermaphroditism and an hermaphrodite are not identical. We are also sorry not to find such words as gastrodiaphany and gastrodiaphanoscope, obligate (applied to parasites), control-animal (or experiment), Laveran, cross-circulation experiment, etc.

Such things as these, however, may be expected in the best of books, but in spite of them the learned editor is to be congratulated upon the excellence of his book and upon the satisfactory completion of his arduous labors.

A HANDBOOK OF LOCAL THERAPEUTICS. By ALLEN, HARTE, HARLAN, AND VAN HARLINGEN. Edited by HARRISON ALLEN, M.D. 8vo, pp. 500. Philadelphia: P. Blakiston, Son & Co., 1893.

THIS book, under the efficient editorship of Professor Harrison Allen, is amply fitted to fill the place in therapeutics for which it was prepared. In looking over its pages one cannot fail to be impressed with the great number of drugs that have found a place as remedial agents in local affections, and the grouping together of such agents must necessarily be of value to the specialist in medicine in the saving of time and in a concentration of knowledge of the therapeutic measures at his disposal. The surgeon, the dermatologist, the otologist, the laryngologist, the oculist, and the gynecologist can each here revel in a mine of information without being compelled to wade through a mass of absolutely irrelevant material. An index of remedies is supplemented by one of diseases, both of which conduce to ready reference. A few relatively unimportant errors and omissions have necessarily crept in. Thus, in treating of the management of acute gonorrheal vaginitis no mention is made of the truly valuable results that have followed the application to the entire vagina of strong solutions of silver nitrate, and while bran as a surgical dressing has received notice, the value of the

bran-bath as an emollient in ulcerated and irritable conditions of the skin is not set down. The editor and his collaborators have completed their work in an excellent manner.

The Diseases of the Nervous System: A Textbook for Physicians and Students. By Dr. Ludwig Hirt, Professor at the University of Breslau. Translated, with permission of the author, by August Hoch, M.D., assisted by Frank R. Smith, A.M. (Cantab.), M.D., Assistant Physician in the Johns Hopkins Hospital. With an Introduction by William Osler, M.D., F.R.C.P., Professor of Medicine in the Johns Hopkins University, etc. With 178 illustrations. 8vo, pp. xv, 683. New York: D. Appleton & Co., 1893.

In less than two years several neurologic text-books have been presented to the profession by American publishers; but we cannot have too many, if they are good, and each presents some special feature. Hirt's treatise, known to the German profession since a few years, is now presented to English-reading physicians in an admirable translation. It is a work of great merit and contains some strikingly original features, as in its manner of classification. Tabes dorsalis and dementia paralytica are placed under diseases of the general nervous system, instead of under spinal affections and mental diseases, a natural and philosophic method of classifying and one that could be extended much further than it has been by Hirt. In the discussion of special subjects, and in remarks on treatment, the book in many places presents a freshness and vigor that are often wanting in compendious text-books. Certain subjects, as myxedema, have been omitted, although akromegaly and other recently described affections are considered.

Part II, which is concerned with diseases of the cranial nerves, is especially full. Under diseases of the vagus, Hirt treats of numerous nervous affections of the air-passages, angina pectoris, nervous palpitation of the heart, tachycardia, cardialgia, nervous dyspepsia, esophagismus, exophthalmic goiter—a somewhat unusual but scientific collocation.

Particular attention is given to therapeutics. The illustrations are excellent and many of them are new. The book is produced in admirable style.

The Throat and Nose and their Diseases. With one hundred and twenty Illustrations in Color, and two hundred and thirty-five Engravings, designed and executed by the Author, Lennox Browne, F.R.C.S.E., Senior Surgeon to the Central London Throat and Ear Hospital, etc. Fourth edition. Philadelphia: Lea Brothers & Co. London: Baillière, Tindall & Cox, 1893.

The special features of this work have been described and commented upon in noticing previous editions. This edition has been revised and brought up to date; but, possibly, in order to save alterations of stereotype plates, the additions are in some instances awkwardly joined. We notice in passing, a misquotation on p. 514, whereby the substitution of "and" for "or," in the citation of Cohen's opinion on the subject of laryngeal neuroses, entirely changes the meaning of the authority quoted, who certainly did not say that *he* could not recognize any difference between the cadaveric and the extremely abducted position of the vocal bands. As a matter of fact the difference is easily recognized and is important in diagnosis. In the copy of Mr. Browne's book before us the tinting of the colored plates is not so good as in previous editions. The pinks are too brownish.

Judging the book as a whole, it is an admirable presentation of its subject in the light of the large clinical experience of a careful observer. It is a book that no specialist can afford not to have, and that the general physician can rely upon as a safe guide and practical adviser.

CORRESPONDENCE.

HAIG'S URIC-ACID THEORY.

To the Editor of The Medical News,

Sir: In the article entitled "Haig's Uric-Acid Theory" in The Medical News of September 16, 1893, p. 310, appears the following: "Already his work has had considerable influence among physicians, and everyone who reads his fascinating pages must feel a strong inclination to acccpt his sweeping generalizations, which ascribe to uric acid human disorders of every complexion." I shall endeavor to show that an excess of uric acid in the blood is the cause of many and diverse human disorders. If Alexander Haig had done nothing more than to direct the attention of the medical world to the dire effect of an excess of uric acid in the blood, great would have been his work.

Just one hundred years ago, in 1793, Forbes Murray affirmed the starting point of gouty symptoms to be the presence of uric acid in the humors of the economy. In 1874 Murchison announced that the excess of uric acid was due to functional derangement of the liver. In these later days Haig writes, elucidating the action of uric acid in the causation of disease.

What disease is more common among adults in America than lithemia, presenting itself under so many various disguises. If it be true that Americans are a nation of "nervous prostrates" (and so it appears), then common indeed is lithemia. Take for example insomnia, a condition far from rare in city life, so frequently *made worse by hypnotics*, so quickly relieved when once the true cause is recognized—a sleeplessness due to derangement of the liver, producing lithemia. In such a case sodium salicylate in combination with caffein citrate yields excellent results.

Then, again, megrim, so very common, is quickly relieved by the same agents as were so useful in insomnia, when the cause is rightly understood as simply a lithemic crisis. The neurologist, Sachs, says that the same form of treatment that had been successful in a number of cases of insomnia proved successful in most of the cases of megrim with which he had to cope.

In acute tonsillitis, always found in subjects whose urine contains an excess of uric acid, I know of no treatment offering better results than sodium salicylate. The same treatment is likewise beneficial in both acute gout and acute articular rheumatism, both of which are due to the same cause—an excess of uric acid in the blood.

At the first annual meeting of the Association of American Physicians, held in 1886, Dr. H. C. Wood (THE MEDICAL NEWS, June 26, 1886, p. 716) said that it was his experience that rheumatism and gout are the same disease.

At the same meeting Dr. Draper, an authority on gout in America, said he thought Dr. Wood was correct in regard to the difficulty of diagnosis between gout and rheumatism. He would be glad to hear from any physician present who was always able to diagnosticate between the two.

Neuralgic pains, so annoying when due to an excess of uric acid; muscular rheumatism, a manifestation of lithemia; gravel, and the painful urethritis so often an accompaniment; and general pruritus, so often due to an excess of uric acid, are all relieved by the administration of sodium salicylate.

Oftentimes palpitation and irregularity of rhythm of the heart are produced by the state of the blood (Garrod); also the minor symptoms of disturbed action of the heart, such as giddiness and dimness of vision (Duckworth); the most prominent symptoms are the nervous, especially those referred to the head, in those cases in which uric acid is present in excess in the blood.

The mal-products of digestion are positive depressant poisons (Brunton); hence lithemic patients present themselves as woful objects; they are in dread of apoplexy or are sure that they are developing paresis, or they are insufferable cranks.

The functions of the liver and the kidneys are very closely related (Delafield); so that what starts as a mere functional disorder of the liver will in time, if not checked, end in organic disease of the kidneys. "Renal degeneration is a consequence of the long-continued elimination of products of faulty digestion through the kidneys"; so that what originates as lithemia often terminates as uremia. It is well to remember that uric acid is a "kidney irritant"; also that uric acid "teases the whole urinary tract from the tubules of the kidney to the meatus"; also that an excess of uric acid is a frequent cause of various ailments. The whole medical world is greatly indebted to Murray, Murchison, and Haig.

Respectfully,

H. A. SHELLEY.

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NEWS ITEMS.

Dr. D. W. Montgomery has been elected Professor of Diseases of the Skin in the University of California.

W. Moldenhauer has been made Professor Extraordinary of Laryngology and Rhinology at the University of Leipzig.

A Municipal Hygienic Institute has been established at Hamburg and placed under the charge of Dr. Dunbar, a former assistant of Prof. Gaffky, at Giessen.

Charles Clay, known as the father of ovariotomy, died recently at Poulton-le-Fylde, near Blackpool, England, at the ripe age of ninety-two years. He performed his first ovariotomy in 1842, with success. In 1845 he extirpated a uterine fibroid through an abdominal incision. He was a prolific contributor to medical literature.

Dr. William B. Towles, Professor of Anatomy and Materia Medica in the University of Virginia, died September 15, 1893, at the age of forty-six years.

Cholera at New York Harbor.—Bacteriologic examination has disclosed the presence of comma bacilli in the dejections of a case of fatal illness on board the steamer Russia from Hamburg, detained in quarantine at New York Harbor. There were several deaths during the journey, but the disease was not believed to be cholera.

The American Electro-therapeutic Association at its third annual meeting, recently held at Chicago, elected the following officers: President, Dr. W. J. Herdman, of Ann Arbor; Secretary, Dr. Margaret Cleaves, of New York; Vice-Presidents, Dr. Franklin H. Martin, of Chicago, and Dr. A. Lapthorn Smith, of Montreal; Treasurer, Dr. R. J. Nunn, of Savannah, Ga. It was decided to hold the next meeting in New York City, on the last Tuesday in September, 1894.

A Week on Cataract.—The Philadelphia Polyclinic will devote a special week, beginning October 30th, to the consideration of cataract. Cataract-operations will be performed by the different methods preferred by Professors Harlan, Jackson, Risley, and de Schweinitz, including operations with iridectomy and simple extraction. The whole subject of etiology, diagnosis, and the dressing and after-treatment will be considered.

In addition to the clinics, demonstrations, and practice of operations on the eyes of lower animals, there will be a series of clinical "conferences," participated in by the professors and the members of the class.

Opening of the Johns Hopkins Medical School.—The regular courses leading to an M.D. degree at the Medical School of Johns Hopkins University opened on October 5th with a class of sixteen, of whom three are women. The high standard set by Johns Hopkins for admission to this school has, for the first time in the United States, secured a band of medical students each with a bachelor's degree from some reputable college. Of the thirteen men, Johns Hopkins supplies four, Yale three, Harvard two, and Amherst, Swarthmore, Virginia Agricultural College, and the University of Wisconsin each one. The women are graduates respectively from Smith, Vassar, and Wellesley.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Rectum and Anus: their Pathology, Diagnosis, and Treatment. By Charles B. Kelsey, A.M., M.D. Fourth edition. New York: Wm. Wood & Co., 1893.

Transactions of the Fourteenth Annual Meeting of the American Laryngological Association, held in the City of Boston, June, 1892. New York: D. Appleton & Co., 1893.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology, and Dermatology. Edited by John M. Keating, M.D., LL.D.; Judson Daland, M.D.; J. Mitchell Bruce, M.D., F.R.C.P.; David W. Finlay, M.D., F.R.C.P. Vol. I. Third series. Philadelphia: J. B. Lippincott Co., 1893.

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ORIGINAL ARTICLES.

PRACTICAL MEASURES FOR THE PREVENTION OF TUBERCULOSIS.[1]

BY LAWRENCE F. FLICK, M.D.,
OF PHILADELPHIA.

THE history of tuberculosis in all times and in all countries in which any history of it is recorded is a broad demonstration of its contagiousness and, by inference, of its preventability.[2] So insidious, however, is its contagiousness that, although this has been recognized by the greatest minds of every age, and has at times taken strong enough hold of the lay as well as of the medical mind to beget successful measures of prevention, at no time in the history of medicine prior to the present age had it been recognized and understood by the medical profession as a body. The contagious theory of tuberculosis is now so far accepted by the profession that it is being taught in our medical schools; so that the medical profession is committed to it, at least through its teaching faculty. The prevention of the disease has, moreover, had sufficient practical testing to remove it from the category of experiments and place it upon the list of sanitary expedients deserving of the most earnest attention of sanitarians. Spain, by teaching her people the contagious nature of the disease in question and by practising crude and unscientific but, nevertheless, successful methods of prevention, avoided carrying the disease into its new colonies in America;[3] Italy, by similar methods, in less than a century, reduced the mortality-rate from the disease in her midst from that of a most virulent epidemic to a comparatively rare disease;[4] England, by establishing special hospitals for the treatment of pulmonary tuberculosis and the consequent isolation of its tuberculous poor, reduced its mortality 50 per cent. in forty years;[5] and Philadelphia, by preaching the doctrine of contagion and teaching its people methods of avoidance and prevention, has reduced the mortality-rate from the disease about 20 per cent. in eight years.[1] With these facts before us and with our profession committed to the theory of contagion, we cannot, without failing in our duty, remain inactive while this disease carries off hundreds of thousands of human beings to a premature grave and inflicts indescribable suffering and loss upon hundreds of thousands of others.

A comprehensive scheme for the prevention of tuberculosis implies: 1. Registration of all cases of the disease which have arrived at the breaking-down or infectious stage. 2. The education of the public at large and of the people immediately concerned as to the contagious nature of the disease and how to avoid contracting it and how to avoid transmitting it to others. 3. The careful and thorough disinfection of all infected houses, penal and reformatory institutions, conveyances and public places. 4. The establishment of special hospitals for the treatment of the poor suffering from the disease. 5. Government inspection and regulation of dairies and slaughter-houses. 6. The enactment of laws and ordinances forbidding practices as a result of which others are liable to be infected. 7. The restriction and regulation of interstate and international emigration of persons suffering from the disease. 8. The retirement of all tuberculous patients in the infectious stage from occupations in which they can infect others and the pensioning of those who cannot be maintained in hospitals.

The enforcement of such a scheme in every particular would completely wipe out tuberculosis in a very few years. Of this there can be no doubt, whether our conclusions be evolved from our present knowledge of the etiology of the disease or from what history records of the past attempts at prevention.

As regards the merits of the respective measures named there will probably be differences of opinion. I have enumerated them partly in the order of their importance, as I rate them, and partly in their natural order of sequence. The feasibility of their enforcement will necessarily vary, and ought to determine which should be adopted when all cannot be adopted. At the present stage of sanitary science and as governments are now

[1] Read before the Section on Hygiene, Climatology, and Demography of the Pan-American Medical Congress, September 7, 1893.

[2] Flick: "Contagiousness of Phthisis," Trans. of the Medical Society of the State of Penna., 1888.

[3] Supra cito.

[4] Flick: "The Prevention of Tuberculosis; a Century's Experience in Italy, etc.," Trans. of the American Public Health Association, vol. xvi.

[5] Flick: "Special Hospitals for the Treatment of Tuberculosis," Times and Register, March 15, 1890.

[1] Flick: "The Influence of the Doctrine of Contagion upon the Death-rate from Tuberculosis in the City of Philadelphia," THE MEDICAL NEWS, May 14, 1893.

equipped for the prevention of disease, there is probably no country in which the entire scheme could be put into operation; nor is it likely that any government is at present in a position to thoroughly enforce any of the measures. The prevention of tuberculosis is, however, so easily accomplished that even the incomplete enforcement of some of the measures would bring about a marked reduction in the mortality from the disease.

1. *Registration of all cases which have arrived at the breaking-down or infectious stage.* Registration is necessarily the foundation-stone of all orderly systematic effort at prevention. To be able to fight an enemy one must first know where he is. Even individual effort at self-protection is futile without this knowledge. Registration should not only include the residence, but also the movements of infectious persons, such as removals from one house to another or from one city to another—for a temporary residence in a house or even a transitory occupancy of a conveyance may infect it sufficiently to convey the disease to others. One tuberculous patient, by frequent change of residence, may infect many houses during the continuance of the disease.

Registration will be objected to on the ground that it will impose additional suffering upon those who are already sorely afflicted. In a matter of such great importance to the well-being of the majority of those now living and of all of those yet to be born, the greatest good to the largest number ought to be our motto. Moreover, the registration of infectious cases of tuberculosis need inflict no suffering on anyone that would not be fully compensated for by a knowledge that near and dear ones can thereby be protected against the disease.

Objections based upon commercial grounds have no foundation in fact. People are too familiar with tuberculosis to take fright at it, even when they believe it to be contagious. The registration of cases would have no depressing effect upon the community as a body, and whatever care-inspiring influence it might have upon individuals would be a benefit. Private business might in certain cases be injured because people would not buy at a place conducted by a tuberculous person; but this would be a benefit to the community, and the individual concerned could easily rid himself of the injury by removing the attendant from a position in which he jeopardizes the health of others. Interference with the value of real estate could be prevented by government disinfection of infected houses.

As most countries are now equipped for carrying out sanitary measures, registration would have to be accomplished through Boards of Health, with the aid of practising physicians. This is already being done with such diseases as smallpox, scarlet fever, typhoid fever, diphtheria, and some other contagious diseases. Many physicians object to being burdened with the labor of making out reports and to being placed in the embarrassing position of having to make public the ailments of their patients. But, with properly prepared blanks, the making out of reports can be termed neither a labor nor a burden, and could easily be attended to by the busiest practitioner. As regards the making public of the ailments of patients, it is, under the circumstances, not only a privileged communication, but one which the public has a right to insist upon being made. The physician has no reason to complain of such duties, because they belong to the profession which he has espoused.

There can be no practical difficulty in the way of registering tuberculosis because of the obscurity of the disease or inability on the part of the physician to make a diagnosis. Tuberculosis is never contagious until broken-down tissue is given off, and when this occurs a diagnosis can always be positively made. There is no occasion for making a report until this stage has been reached.

2. *The education of the public at large and of the people immediately concerned as to the contagious nature of the disease and how to avoid contracting it and how to avoid giving it to others.* Of all of the contagious diseases the most easily prevented is tuberculosis. Its contagion is strictly confined to broken-down tissue, and this broken-down tissue, when given off, is readily recognizable—is indeed likely to attract attention. Efficient sterilization of all broken-down tissue must absolutely prevent the spread of the disease, and as this tissue is always within reach when it is a source of danger to others, and is never a source of danger to others unless it is within reach, sterilization is always feasible and is within the power of every one. The proper education, upon this subject, of the public and the people who either have tuberculosis or who are exposed to it would go a long way toward preventing the disease.

The public at large ought to be educated upon the question of contagion. This can best be done through the Public Press, which has already accomplished a great deal in this direction. Those who have tuberculosis ought to be taught how to avoid giving it to others, and those who nurse tuberculous patients or whose duties require them to be about those who have the disease should be taught how to avoid contracting it. Special literature ought to be prepared for such persons and placed within their reach. This can be accomplished through Boards of Health, and better still through the organized efforts of humane persons who have given the subject special thought. Societies for the prevention of tuberculosis will find in this work not only a legitimate cause for springing into existence,

but a field of labor worthy of their most earnest efforts. Such societies ought to be organized everywhere, and a concerted effort should be made, the world over, to educate the people upon methods of avoidance and prevention. The Pennsylvania Society for the Prevention of Tuberculosis was organized in Philadephia about two years ago, and during its brief existence has printed and distributed about thirty thousand tracts on "How to avoid tuberculosis" and "How persons suffering from tuberculosis can avoid giving the disease to others." There is reason to believe that its efforts are already bearing good fruit in an increased reduction of the mortality-rate from the disease in Philadelphia. The greatest obstacle in the way of performing its work has been non-registration of the disease. Were every case of tuberculosis registered it would be an easy matter to place literature where it would do the most good.

3. *The careful and thorough disinfection of all infected houses, penal and reformatory institutions, conveyances and public places.* Were it possible to induce every person suffering from tuberculosis to sterilize every particle of broken-down tuberculous tissue, immediately upon its being given off, it would not be necessary to institute any other measures for the prevention of the disease. Unfortunately this is not possible. The majority of tuberculous patients, even when they have been informed of the infectious character of the sputa, will spit where it is most convenient, and thus contaminate everything about them.

Infected houses play a most important rôle in the spread of the disease. In my topographic study of tuberculosis in the Fifth Ward of the City of Philadelphia I found that at least 50 per cent of all cases were contracted in such houses.[1] Drs. Chapin, of Springfield, Mass.,[2] and Louis S. DeForrest, of New Haven, Conn.,[3] have since made similar studies in their respective towns, with identically the same results. Dr. Cornet, of Berlin, has produced tuberculosis in animals by inoculating them with the scrapings from the walls of rooms which had been occupied by tuberculous patients.[4]

Penal and reformatory institutions have been so scourged by tuberculosis that commitment to them is frequently paramount to a death-sentence. In Germany, Baer and Cornet have made statistical studies upon this subject and have found that from 45 to 70 per cent. of all deaths in penal institutions were due to tuberculosis.[1]

Conveyances, such as steamboats, railway-cars, street-cars, carriages, etc., and public places, such as churches, public halls, public squares and streets, are constantly being contaminated with the expectoration of tuberculous patients. Fortunately however, these are not prolific sources of infection, because most people require prolonged and continuous exposure to contract tuberculosis. But persons who are greatly predisposed to the disease or who are in a weakened, depressed condition will contract the disease upon slight exposure, and infected conveyances and public places are to these a real source of danger.

With the clear knowledge that we have upon these various methods of spreading the disease it is incumbent on the government to see that every place which has become contaminated with broken-down tuberculous tissue be carefully disinfected. When a death from tuberculosis has occurred in a house the Board of Health should see that the rooms occupied by the deceased, and the furniture and clothing, that could in any way have been contaminated, are properly disinfected. When a house has been disinfected the fact should be recorded in an open record, of easy access to the public, so that persons seeking residences can first inform themselves as to whether or not a house is free from contagion. In penal and reformatory institutions every cell or room which has been occupied by a tuberculous person should be thoroughly disinfected before being assigned to a new occupant. Here the authorities have absolute power and there ought to be no difficulty about enforcing the most rigid rules in regard to prevention and securing the most thorough disinfection after contamination. The disinfection of conveyances and public places will have to be left largely to the sense of justice and propriety of those who have charge of them, as it is practically impossible to make and enforce rules covering such cases. Much can no doubt be accomplished by education. Most people are well disposed to do what they can to prevent the spread of disease, provided they have the proper knowledge and the necessary means. The demands of an enlightened public will probably be the most powerful lever that can be brought to play upon both individuals and corporations who have charge of any and all kinds of conveyances and places of public resort, to induce them to keep these free from contagion.

4. *The establishment of special hospitals for the treatment of those suffering from the disease.* Among the very poor, preventive measures in their homes are so difficult of execution that they are practically

[1] Flick: "A Review of the Cases of Tuberculosis which terminated in Death in the Fifth Ward of the City of Philadelphia during the year 1888," Trans. of the Philadelphia County Med. Soc.

[2] Dr. Chapin's paper has never been published in a medical journal to the best of my knowledge.

[3] Rep. Bd. of Health of Conn., 1891. N. Haven, 1892, xiv. 216—227.

[4] Dr. George Cornet: "Die Verbreitung der Tuberkelbacillen ausserhalb des Korpers," Zeitschrift für Hygiene, Band v, 1888.

[1] Dr. George Cornet: "Die Tuberkulose in den Strafanstalten," Zeitschrift für Hygiene, Band x, 1891.

impossible. Families who can barely make a living during health and of which every member has to contribute toward a common fund for sustenance are so badly upset by a prolonged illness, such as tuberculosis, that they are not capable of either understanding or putting into operation any systematic sanitary measure. Everything is made subservient to the happiness, comfort, and freedom from worriment of the sick one. The room that serves as the family kitchen and dining-room is turned into a sick-room, and spitting all over it, into the coal-scuttle or into the front of the cooking-stove, anywhere indeed that is convenient, is a privilege that is freely accorded. Such habits in such places mean extension of the disease to the weakest member of the family, until in turn every one has assumed the rôle of victim and propagator of the disease. Among this class of people the most efficient measure for the prevention of the disease is the establishment of special hospitals for the treatment of those who are stricken down. Removal of the patient to a hospital removes the source of infection and at the same time relieves the pressure of worry, want, and care, which so strongly predispose the remaining members of the family to the disease.

Special hospitals for the treatment of tuberculosis have existed in Europe, and especially in England, for many years. In England the motive for their establishment was not prevention, but extending charity to the deserving poor. Now that it has been demonstrated that segregation will prevent the spread of the disease and we still have the inspiring motive that England had, we ought to move more rapidly in the matter than is possible on the slow wheels of charity. Whilst every effort to establish special hospitals on the basis of charitable support should be encouraged by general aid, the government should promptly establish such hospitals on its own account. The only legitimate ground upon which the government can appropriate money for the support of hospitals is that of protecting the public against disease and death. Inasmuch as tuberculosis has been demonstrated to be a preventable disease, and as it has been proved by experience that segregation will prevent its spread, the establishment of hospitals for tuberculous patients becomes as much a function of the government as the maintenance of a police force. The truth of this proposition must sooner or later present itself to every enlightened government.

In considering the matter of special hospitals for the treatment of tuberculosis as a preventive measure, the question of forcible segregation, with its horrible features, need have no deterring influence. In the first place there is no necessity for such segregation. Were hospital-doors throw open for such cases there would be more applicants for admission than could be accommodated. With all its present capacity, which is very large indeed, England cannot accommodate all of the poor tuberculous patients that appeal for admission into its special hospitals. In the next place an alternative can always be given without jeopardizing public health. In a given case of tuberculosis in which the question of forcible segregation might arise, the sick person and the family could be given a choice to either have the patient go to a hospital or practise certain preventive measures at home. Such measures could then be enforced by the Board of Health, as there would be a penalty at hand to support the order.

In our American system of government the taxation for the support of such hospitals ought to be as direct as possible, and for this reason they ought to be established and maintained largely by cities and States. Every large city should have such hospitals under the supervision and support of the city government, and every State should have at least one such hospital under its supervision and support.

It would be a step in the right direction of judicious bestowal of charity if some of the general hospitals of our large cities would take up this subject and devote themselves entirely to the care of the tuberculous poor. It is a well-known fact that the unfortunate victims of tuberculosis are turned away from general hospitals because of the disease from which they suffer. As general hospitals have grown so numerous of late that there is at times a lively competition for patients, it would no doubt prove a wise deviation from the beaten path for some of them to take up this specialty.

5. *Government inspection and regulation of dairies and slaughter-houses.* Ever since it became known that tuberculosis affects animals as well as man and that it is identically the same disease in both, there has been much speculation as to which was attacked first and what part each respectively plays in infecting the other. Some who have given the subject much thought and study, and notably among them Dr. E. F. Brush, of Mount Vernon, N. Y., claim that the disease is primarily a bovine disease and that human beings and animals other than the cow are infected from this source. I have myself never been able to accept this theory, but whether we accept it or not, so much is certain, that human beings and domestic animals can and constantly are infecting each other.

The mediums through which the cow infects human beings are milk and meat. Much study has been given to this subject both in this country and in Europe, and we now have a pretty clear idea as to what constitutes infectious milk and meat. The milk of a tuberculous cow is not likely to be infectious unless the udders are diseased, so that the secretion becomes mixed with broken-down tuberculous tissue. At all events it is necessary that the bacilli gain

entrance into the milk in order to make it capable of conveying the disease. The meat of a tuberculous animal is only infectious when the deposit exists in the parts that are consumed or when those parts have become contaminated in slaughtering and preparing for the market. It is important that these facts be kept clearly in mind, because of the important positions which meat and milk occupy as foodstuffs and the great injury that can be done by exaggerating the danger of using them. Clinically we have very little evidence of the conveyance of the disease through these mediums. I have never seen an authenticated case recorded in literature, and personally I have never seen a case which I could trace to the use of meat, and have seen but few cases in which there was satisfactory evidence that they were contracted from the use of milk.

But while scientific investigations and clinical observations both point to the conclusion that in practical life the use of milk and meat is not a prolific source of tuberculous infection, it nevertheless cannot be denied that it is a source of sufficient importance to demand the most earnest attention of the government. An effort should be made to stamp out tuberculosis among cattle. To accomplish this the coöperation of Federal, State, and city governments will be needed. The Federal Government should prohibit and prevent the importation of tuberculous cattle. State governments should carefully examine every herd within their borders and condemn every head that is in the slightest affected by the disease. Cities should condemn and forbid the sale of every carcass that shows the slightest evidence of taint in the slaughter-house, and permit no one to sell milk within its limits except such as draw their supplies from dairies of which the herds have been officially examined. Such concerted effort would soon stamp out the disease among cattle, for it would no longer be commercially profitable to keep anything but healthy herds. Actual loss to individuals ought of course to be made good by the government.

6. *The enactment of laws and ordinances against practices which are liable to infect others.* Civilized man, in spite of his civilization, retains many of his primitive habits. Among these is the horrible custom of spitting anywhere and everywhere that is convenient. There are a great many diseases of which the contagion resides in the expectoration, and all of which put people to a great deal of inconvenience, but none of which is so serious in its results as tuberculosis. How much would be added to the comfort and happiness of the human family were it possible to put a stop to the filthy habit of indiscriminate spitting.

The promulgation of knowledge about the danger of promiscuous spitting would no doubt contribute something toward breaking up the custom. It is, however, so much easier and more convenient to spit out than into a cuspidor or handkerchief, that with the majority of people it will require more than education to induce them to change their habits. The necessity of washing handkerchiefs no doubt contributes something toward the custom, and its continuance after people know the danger. The introduction of cheap paper handkerchiefs, which could be burned after using, would do away with this excuse for the habit. The enactment of State laws and city and borough ordinances against spitting into public conveyances, into public places or upon the streets would, however, be the most powerful lever that could be brought to bear upon the custom with the masses. It would be difficult to enforce such laws and ordinances, and they probably could not be enforced to the letter. Their existence and attempted enforcement would, however, do much good, if only even as a means of education. Many street-car companies now have notices up in the cars warning passengers not to spit upon the floor, but they do not attempt to enforce the order, probably because they have no warrant of law to support them should the matter be brought to an issue.

The disposal of clothing and furniture, either by gift or sale, without previous disinfection, is another practice fraught with danger. The Spaniards and the Italians recognized this source of infection a century ago and took the most careful precautions against it.[1] Their method was cumbersome and would not do as a model, but it was effective, and serves to illustrate what can be accomplished by a determined effort. The simplest way of stopping this mode of spreading the disease would be to make it a misdemeanor to dispose of anything, whether by sale or gift, that had been used by a tuberculous patient or had been in his room during his occupancy, without first thoroughly disinfecting it. Here again would, of course, come up the difficulty of enforcing the law, but the existence of such a law would at least enable individuals to protect themselves.

7. *The restriction and regulation of interstate and international immigration of persons suffering from the disease.* History teaches that one of the most potent factors in the spread of tuberculosis has been the migrations of tuberculous persons.[2] The will-o'-the-wisp of a climate that would cure tuberculosis has been indirectly the means of infecting the world. There is scarcely a country which has not at one time been free from the disease, and which for that reason became a resort for those suffering from it. In turn, the place became a place of exodus and a source of infection to some newer country. All of America was a virgin soil for the disease when Europeans first came. New York, Pennsylvania—in

[1] Flick: Prevention of Tuberculosis, supra cito.
[2] Flick: Contagiousness of Phthisis, supra cito.

fact every State and Territory—has in turn been a resort for the tuberculous, and has at some time been believed to possess a curative climate.[1]

Unfortunately, this seductive method of spreading the disease is still in active operation, and with our modern facilities for travel has become more prolific than ever. It probably furnishes the most frequent source of infection for the wealthier class—those who can change their place of abode with every change of season. It infects our hotels, our sleeping-cars, and our state-rooms. It has made tuberculosis as rampant under the sunny sky of California as in the changeable climate of the Atlantic slope.[2]

What is the remedy? International immigration of persons suffering from tuberculosis should be entirely stopped. This is a matter for the Federal Government, and in the United States is, I believe, through the efforts of Surgeon-General Wyman, already receiving attention. Foreign travel of persons in the early stage of the disease, before there is any breaking down, need not be interfered with. Interstate emigration should be restricted and regulated. This would, of course, be a matter for the States, and in certain cases for cities to take charge of. Persons in the infectious stage of the disease should be discouraged as much as possible from changing their places of residence, and when they do make changes it should be with the consent and under the supervision of the health-officer. Some of the Territories and newer States, which are as yet comparatively free from tuberculosis, would probably find it to their advantage to shut out from their borders all tuberculous persons in the infectious stage who seek admission for climatic reasons. Such an embargo need, of course, not be applied to those in whom the disease has not yet reached the breaking-down stage, and to those that have it would be more of a benefit than an injury, as they can no longer be saved by a change of climate, and are frequently injured by it.

8. *The retirement of all tuberculous patients in the infectious stage from occupations in which they can infect others, and the pensioning of those who are dependent on their own labor for a living and who cannot be maintained in hospitals.* Because of the prolonged duration of tuberculosis it is necessary for the poor to follow their callings in life during the infectious period of the disease. We consequently have tuberculous patients as cooks, waiters, barbers, fruiterers, grocers, butchers, dairymen, nurses—in short, we have them in every walk of life. To have these people give up their positions would be a great hardship, unless some provision were made for their support and that of the destitute families depending upon them. As the giving up of their positions would be in the interest of the public good they ought to be retired at the public expense. Every case of tuberculosis which has arrived at the infectious stage ought to be retired from any position carrying with it the danger of infecting others, and either be admitted into a hospital or paid a pension sufficient for maintenance. For the destitute family depending upon the labor of the person affected there would be ample provision in the eleemosynary institutions already in existence.

Retiring and pensioning persons suffering from a disease which is a menace to others will no doubt be considered too advanced ground in preventive medicine to be considered seriously at present. It will, however, force itself upon our attention in the near future. The justness of the principle involved has already been admitted in the compensation allowed for diseased cattle slaughtered by direction of the government.

By the establishment of special hospitals for the treatment of persons suffering from tuberculosis the tuberculous poor of the country could be maintained at a quite reasonable expense. The taxation which would have to be imposed upon the individual to enable the government to carry out such a plan would be returned a hundred-fold in the protection afforded against the disease. Tuberculosis carries off at least one hundred thousand people annually in the United States. It has been estimated that this entails a loss in public wealth of about five hundred millions of dollars a year.[1] A small fraction of this great loss well expended would go a long way toward wiping out the disease.

[1] Supra cito.

[2] T. D. Myers, M.D.: Some of the Peculiarities of the Climate of California.

[1] Flick: "The Duty of the Government in the Prevention of Tuberculosis," Journal of the American Medical Association, 1891, vol. xvii.

TESTS FOR HETEROPHORIA, AND THEIR COMPARATIVE VALUE.[2]

BY EDWARD JACKSON, A.M., M.D.,
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WE discover a latent squint, a tendency of the visual axes to turn, not both toward the point fixed, but in different directions, by preventing binocular vision, in the interest of which the tendency is habitually overcome and the squint rendered latent. By preventing binocular vision the latent squint becomes manifest, and can be measured. The different methods of accomplishing this might be considered as constituting three classes of tests for heterophoria.

First, the *objective method.* By covering one eye

[2] Read before the Section on Ophthalmology of the College of Physicians of Philadelphia.

with an opaque screen, as the hand, and so preventing binocular vision, the covered eye is allowed to deviate. The extent of the deviation is commonly estimated by shifting the cover from one eye to the other, causing the eyes alternately to fix and deviate, and observing the amount of motion required to carry each eye from the one position to the other.

The *separation of images.* In the second class of tests binocular vision is rendered impossible by the removal of the image formed in one eye from the region of the fovea by a prism, the removal being in a certain definite direction, and of such extent that the physiologic power of adjustment is unable to overcome it. This is the ordinary diplopia-test with prisms, the production of vertical diplopia to test lateral deviations, or of lateral diplopia to test vertical deviations.

Dissimilarity of images. In the third class of tests binocular vision is prevented not by the removal of one image, but by the alteration in character of the image, so that if both images should fall on the fovea they will be so entirely different that no attempt at fusing them will be made. Of the latter class the production of diplopia by placing a red glass before one eye, and the Maddox rod or the cylinder-test are the familiar examples.

In estimating the relative values of these different classes of tests, the first has the advantage of being entirely objective. If the patient obeys instructions and conforms to the conditions of the test (and it is usually easy to judge as to the accuracy of conformity) we are in no way dependent on his honesty or powers of observation. The accuracy of result depends on the training and care of the observer, and in no way on the mental attitude or mental development of the patient.

Another advantage which it seems to me gives the test greater practical value and makes it impossible to dispense with it is the fact that for one of the eyes all vision is prevented. If the screen be properly held the useful field of one eye becomes a complete blank, and the movements of that eye have absolutely no significance as regards the objects to which attention is directed. Under these conditions the tendency to habitual innervation of the muscles, the innervation habitually required for binocular vision must be reduced to the minimum, and the results obtained will be free from an influence that enters more or less in the application of the other tests. For instance, in a certain class of cases, generally highly neurasthenic, even possibly hysteric, tests of the other kind may show a high degree of heterophoria; and this will, by the wearing of correct prisms, run up to almost any extent. Yet the tests are evidently a cause of effort on the part of the patient. The results of repeated trials, or of the continuance of a single trial, are extremely variable and the objective test may show but little or no heterophoria.

In these cases, it has seemed to me that the results of the objective test were the ones upon which to base our practice, that with the other tests, the effort of looking, combined with excitement produced by the distorted appearance of the observed object, excited an unusual and abnormal condition of innervation of the muscles, and yielded results often far removed from those to be obtained in a condition of real relaxation. On this account I would not in any case in which I purposed direct treatment of the heterophoria, omit the repeated application of the objective test.

The second class of tests, which have practically been developed from the Graefe dot and line, seem to me rather the least valuable of the three, although their value depends much on details of application. The condition of binocular diplopia produced by prisms makes the impression on the sensorium of diplopia produced by faulty innervation of the muscles, or of pressure altering the direction of one of the eyeballs. Such diplopia we expect to correct by an effort directed to the ocular muscles, an effort that in childhood may be voluntary and conscious, but that after the establishment of binocular vision is maintained as a reflex. If the images are separated widely enough this effort may after some little time be given up. But that there is a tendency to make it I think can be readily demonstrated, both by the sensation of confusion or of strain produced by the application of the prism-test, or by such phenomena as the change of position, the middle light, when a Maddox double prism is used but little stronger than the ocular muscles are capable of overcoming. With such a prism it will almost always be found that the middle light, instead of remaining half way between the others, approaches either the upper or the lower light (if the prism be held with its base horizontal), even though the vertical balance be really quite perfect.

If the two images of the test-object are sufficiently separated to prevent any effort at fusing them or bringing them closer together, and in the field of vision lie other objects, which, from their large size or the direction in which they are placed, furnish lines that can be fused either with or without effort of the ocular muscles, such effort will be persisted in. For instance, the images of the dot or point of light may be quite removed from one another, but images of doors, windows, or pieces of furniture, will partially overlap and so furnish inducement for continued muscular effort to maintain fusion. Such tests are improved by furnishing a uniform background, as by thoroughly darkening

the room when the point of a flame is employed, and by using a dot on a large sheet of plain paper. And if this test be mainly relied on these precautions are essential.

Other sources of variation and inaccuracy lie in imperfect placing of the prisms, rendering necessary the use of some such instrument as the Stevens phorometer. And a source of possible inaccuracy, which I have not seen mentioned, is the image produced in a weak prism by double reflection from its surfaces, having a displacement in the direction of the displacement of the refraction-image of the prism, but much greater in degree. This is most noticeable when the point of light is employed in the thoroughly darkened room. In fact, under these conditions, otherwise the best conditions for such a prism-test, this reflected image can scarcely be ignored.

The third class of tests present certain distinct advantages, in that fusion being prevented by the difference in appearance of the images, the images can be exactly superimposed, requiring no estimation as to their relative position or distance apart. The simple test of covering one eye with a red glass is valuable in all cases in which it gives diplopia. The placing of glass of one color before one eye and of another color before the other so increases the difference between the two images that it may increase the range of application of the test, but I have not employed the test in this form. For its best application the condition of the uniform background, obtained by thoroughly darkening the room, is also essential, as the difference obtained in the images of miscellaneous objects by alteration of color would be quite insufficient to suspend the tendency to binocular fusion.

With the Maddox rod-test or cylinder-test care as to the background for the test-object is unnecessary, because the alteration of image produced by the rod placed before one eye is so great that nothing but the test-object, the point of light, gives rise to any recognizable impression, can be identified at all.

For the recognition of heterophoria at a distance this has proved with me the most satisfactory test. Its simplicity makes the application easy with even the least intelligent patient. While it does depend on the patient's observation, the simplicity of the observation required and the low grade of the intelligence necessary to make it render the result uniform and satisfactory for all sorts of patients. This simplicity of requirement constitutes its superiority over the test proposed by Stevens, in which a strong spherical lens was substituted for the cylinder, and which allowed the estimation of all sorts of heterophoria at once, instead of selecting out a defect in a single direction.

As a collateral test the measurement of the power of abduction, adduction and sursumduction is of some value, although the variability of different results obtained with different patients, or with the same patient at different trials, makes these tests alone of very little value. In the estimation of these powers the variable rotary prism is of especial value, as greatly saving in time; but I have not found that with it the results obtained were essentially different from those with tests made by placing before the eyes the prism from the trial-case.

In using the rotary prism it has been suggested to record both the strength of prism with which diplopia appears and the strength that permits binocular re-fusion. It seems to me, however, when repeated trials are made, that, except for adduction, the difference between these is not very great, being principally due to the time lost partly by the patient and partly by the surgeon in registering the fact of separation or re-fusion.

The tests so far discussed are intended for application at a distance of four meters or more. For use at the ordinary distance for near work, I formerly found the objective test and the diplopia, by vertical removal of one image, the only ones of general practical utility.

Recently, however, I have found the rod-test or cylinder-test capable of an important application in this direction, by merely diminishing the lens-strength of the cylinder sufficiently to allow the recognition through it of the elongated image of a black dot on white paper, held at ordinary reading-distance. A 12 D. cylinder, or the two 6 D. cylinders from the trial-case held together, answer the purpose admirably.

DEVIATION OF THE SEPTUM NASI.

BY WILLIAM MARTIN, M.D.,
OF BRISTOL, PA.

DEVIATION of the nasal septum is a subect of considerable interest, and one that has received a good deal of attention from rhinologists, but the profession in general has not as yet recognized the value of inspecting the nasal cavities, by which they might frequently be able to find a *causus morbi*, which otherwise would be hidden. During recent years there has been considerable literature from specialists upon this and kindred subjects, and stress is laid upon the advisability of inspecting the nasal cavities in each case in which there is the slightest suspicion of irritation there. This has been my practice, and I feel well assured that it has proved a most useful aid in diagnosis and treatment. One can readily see that the terminal nerve-irritation here may be the cause of trouble in other parts of the organism, as well as when situated in other cavities of the body.

With true deflection of the nasal septum there are usually associated such other abnormalities as spurs, ledges, and thickenings, that tend to produce the same result, viz., narrowing or occlusion of the spaces. The point of curvature of the cartilage, in my experience, and I think this is the experience of most, has been principally in the anterior portion of the nasal cavity.

The frequency of septal deviation varies with the race and country, according to the observations of some authorities. Civilization appears to be a factor also, for Americans and Europeans seem more prone to them, whilst Collier estimates that about 80 per cent. of savages are exempt. This may account for the different figures given by different authorities. In 1888 Delavan found deviations in 50 per cent. of his cases, Mackenzie (1884) in 76.9 Jarvis (1888) in 81, Löwenberg in 86, and Heymann (1886) in 96.4 per cent., showing quite decided differences, and these only to be accounted for by the difference in place and time of observation. The classification of these abnormalities by Stocker is about the simplest, and therefore the best. It is as follows: 1. Angular, or when there is a decided angular prominence in one cavity, with a corresponding widening of the other. 2. Curved, or an arch-like condition. 3. Sigmoid or double-curved, which may be either from above downward, or from before backward.

The causes of deviation are more or less obscure, but may be stated to be as follows: traumatism; such diseases as syphilis and rickets; growths, such as polypi and hypertrophies of turbinated tissues; and such possible factors as forcibly wiping the nose in children, which tends to displace the yielding and, as yet, unossified plates of bone, as well as the less resistant cartilage. The theories in reference to the cause are numerous and interesting, but so far as I have seen, I think Seiler's the most practical. He maintains that the beginning is a long-standing inflammatory process during childhood. The thin cartilaginous plate, being over-nourished by the continually congested perichondrium, has deposited within its substance more new cells than are required to replace the defunct ones, which are being carried off, and the tissues consequently increase in bulk; the bony framework into which this plate is fixed preventing this extension, bulging to one side or the other naturally follows. This explanation seems quite logical, but it is only one of many theories advanced, and while all are interesting, too much space would be required for their presentation here.

The symptoms connected with septal deflection are quite numerous and vary with the degree of the deformity. They may be divided into two classes, the mechanical and the reflex.

The first set of symptoms are probably those which attract attention to the nasal cavities, as frequently they are of the most decided character, resulting from partial or total occlusion. Mouth-breathing may be mentioned as one easily recognized. The one almost constant condition is chronic catarrhal inflammation of the mucous membrane; this is held by some to be the cause rather than the result of deviation of the septum, but I think that the weight of opinion is in favor of the latter view. At all events, chronic catarrhal inflammation is usually found accompanying this septal deformity. It is probably caused by the unevenly distributed air-pressure, which is followed by congestion, and this in time develops into an inflammation, going through its various phases until the chronic type is reached. The symptoms of this condition are too well-known for me to enter into details here. I may mention that the hypertrophic form is that most often met. In my practice I have found this affection and septal deformity to go hand-in-hand. Some months ago, in a paper upon this subject read before the Burlington County (N. J.) Medical Society, I spoke of finding in my first one hundred cases of chronic catarrhal rhinitis, this deformity of the septum in various degrees, and, in my mind, dependent upon the latter condition; and since then I have had no reason to change my opinion, for it has been found to be the same in subsequent cases. It is a noticeable fact that the greater the deformity the more difficult the cure, and some cases, in fact, are incurable, unless operated upon. This has been my experience in a fairly large number of cases.

Another condition that may follow nasal occlusion is partial or total deafness. One other result that often proves intractable is the annoying pharyngitis sicca, which is due to the supply of the natural moisture of the breath being cut off, because of mouth-breathing, the air not entering, as it should, and being moistened and warmed in the nasal cavities; this in time is followed by atrophic changes in the mucous membrane and its glands. Together with these preceding conditions may be mentioned such minor symptoms as a feeling of fulness in the head, frontal headache, epistaxis, etc., which are more or less dependent upon the inflammation of the pituitary membrane.

Now as to the reflex symptoms. Here we have those that often puzzle the physician, in search for the cause of the affection he may be treating. It has not been many years since the nose has been recognized as a factor in disease, and for this reason I think the true cause of some affections has been overlooked and some other organ has been accordingly badly dealt with. It is natural to think that it is possible for the nose to be the seat of trouble, considering the amount of irritation to which it is

constantly exposed, and of course it is connected with other organs sympathetically, and it seems to me strange that it is not more frequently looked after.

To enumerate some of these symptoms, we have more commonly persistent headache; violent sneezing, often difficult to control; a sense of suffocation; frontal neuralgic pains, spoken of as being deep in the bone; constant lacrymation, and many other minor ones. The one condition made prominent in recent years is hay-fever, while it has been proved pretty conclusively that asthma may at times be dependent upon this nasal condition. Some of the more rare results are supra-orbital neuralgia, rarely trigeminal, and insomnia. Heymann mentions a case of paresthesia as a result of this irritation.

The diagnosis of deviation is very easily made, being apparent upon inspection of the nasal cavities.

The treatment depends upon the amount of the deflection. When slight, strong astringents will probably remove the irritability and inflammation of the tissues, and thus relieve; but when the deformity is sufficient to obstruct the canals, operative procedure is called for. In the average case of excess of cartilage projecting outward in the canal, the knife or saw will quickly remove it, but more is required when the deviation is greater, and, as it often does, meets the turbinated tissue of the same side, and to which it becomes united by cartilage This must be removed and the septum straightened; this may be done by cutting out a piece at the point of greatest curvature, and forcibly straightening with a pair of strong, smooth-bladed forceps. The septum should then be held in place firmly until healed. I omit the minor details purposely, as the operation is one well known. I generally use a 10 per cent. solution of cocain for the local anesthesia.

In conclusion, I may say that I have had a number of cases of the conditions mentioned, in which both sets of symptoms were very evident, and, after the cause was removed by operation, I had the satisfaction to find the symptoms disappear.

335 RADCLIFFE STREET.

CLINICAL MEMORANDA.

ABORTIVE TREATMENT OF GONORRHEA WITH OIL OF CINNAMON.

BY J. CHALMERS DACOSTA, M.D.,
DEMONSTRATOR OF SURGERY IN JEFFERSON MEDICAL COLLEGE.

THE treatment of gonorrhea is as yet purely empiric. Countless remedies and innumerable methods have been employed, but as yet no specific has been discovered, and no entirely satisfactory plan has been devised. The discovery of the gonococcus, and the fact that it dwells under the epithelial layer as well as upon it, points the way toward a scientific method of cure. We can affirm that remedies that act merely upon the surface by application through the medium of the urine cannot effect a cure. The balsams, taken internally, modify the symptoms, but that their use shortens the case is much to be doubted. The astringents, it is quite true, will improve an ordinary non-suppurative inflammation of any structure by causing constriction of the vessels, increasing the rapidity of circulation, washing adherent corpuscles from the vessel-walls, and promoting absorption; but astringents do not do good in acute suppurations. My experience with astringents as remedies in the acute stage of gonorrhea has not been favorable.

The proper method of treatment of gonorrhea, when the case is seen early, would be to use an antiseptic agent. The use of hot retro-injections of corrosive sublimate does unquestionably do good, but the corrosive has to be used in great dilution (1:20,000), as strong solutions are irritating. In order to most certainly cut short a beginning gonorrhea:

1. The mucous membrane should be cleansed as a preliminary to every antiseptic injection. The stream of urine, so often relied upon, does not satisfactorily accomplish this. The mucous membrane is thickened and thrown into folds; small drops of urine lodge in the crypts and hollows, to decompose and irritate, if not washed away; and the urine, so far from cleansing, is an offending substance which it is desirable to remove. Hence, before injecting an antiseptic, the bladder should be emptied, and the urethra washed out with hot water or, better, with a solution of hydrogen dioxid. Dr. J. William White has for some time recommended the use of hydrogen dioxid in gonorrhea. The fifteen-volume solution is diluted with an equal bulk of water and injected with an ordinary syringe, or, as I prefer, sprayed in with a metal-nozzled atomizer. The spraying enables us to reach all parts of the urethra. It causes considerable distention, which must not be permitted to produce much pain. In letting it out care should be taken that flakes of froth do not fly into the eyes. The spray should be continued for a moment or two, the meatus being opened repeatedly to allow the froth to escape.

2. After cleansing the urethra an antiseptic agent should be injected. This agent should be non-irritant, or but slightly irritant. It should be certainly germicidal; it should be capable of permeating the connective tissue beneath the epithelial cells; and it should have a tendency to remain in contact with the surface-tissue, and not at once to flow away. For many months past Dr. D. Braden Kyle has been engaged in our private laboratory in a series of experiments in regard to the properties of the oil of cinnamon. He found this substance to possess the most remarkable antiseptic powers (the report will soon be published), and used it in the treatment of infective and non-infective inflammatory conditions of the nasal and aural passages, with most gratifying results. His success induced me to employ the agent in the treatment of gonorrhea. The oil can be applied once daily by means of the atomizer (and this plan is most efficient, if the physician applies it himself, or the patient is sufficiently intelligent to do so.) The oil is mixed with benzoinol in three degrees of strength, 1 drop, 2 drops, and 3 drops of the oil, respec-

tively, to the ounce of benzoinol. On the first day solution No. 1 is used (one drop to the ounce); on the second day solution No. 2, and after this solution No. 3. The benzoinol serves the useful purpose of causing the thorough diffusion of the oil, and also causes it to adhere with considerable tenacity to the mucous membrane. Dr. Horwitz prefers to use the oil by injection, employing a solution of the same strength in albolene or benzoinol. This plan I have tried, and believe it to be the best when the patient lacks intelligence, and is obliged to largely carry out his own treatment.

It is in beginning gonorrhea that oil of cinnamon finds its most useful field. In acute, thoroughly developed cases, its employment induces considerable pain; but, though it does not check the disease, it causes abatement of the *ardor urinæ*. In chronic cases it also seems of considerable use. I am far from claiming to have found a specific, but I am quite sure that cinnamon is a valuable remedy in certain cases of gonorrhea. In forty cases of beginning acute urethritis, clinically recognized as gonorrhea, of from three to five days' duration, the following results were obtained:

In 6 cases the discharge ceased in two days and did not return; in 12 cases the discharge ceased in five days; in 6 cases the discharge ceased in from eight to ten days; in 10 cases the discharge ceased in from ten to fifteen days; in 2 cases the treatment failed entirely, and was abandoned after two weeks; 4 cases did not return after the first visit.

No other treatment was used, although ordinary hygienic and dietetic precautions were taken. Dr. Horwitz informs me that 15 beginning acute cases under his observation were cured within ten days. In 10 cases of chronic gonorrhea, without apparent stricture or granular patches, the treatment proved successful: 4 cases were cured in two weeks; 3 cases in three weeks; while 3 cases were benefited but not cured. In no case was a complication observed.

These observations, chiefly made in the Jefferson College Hospital, would seem to justify the conclusion that oil of cinnamon is of value in the treatment of beginning gonorrhea and of chronic gonorrhea. Whether or not the drug will prove of benefit when given internally, future experiments will show.

The injections should be made three or four times a day, immediately preceded by micturition and cleansing of the urethra with hydrogen dioxid. In cases in which considerable pain is caused by the injection, the weaker solutions should be used, and retained for but a short time.

The irritant injections, if strong solutions are used, seem to favor the development of stricture, an objection from which oil of cinnamon appears to be free.

CHRONIC ENDOMETRITIS: TREATMENT BY DRAINAGE.

By JACOB C. RUTHERFORD, M.D.,
of Providence, R. I.;
Adjunct Professor of Obstetrics and Diseases of Women in the Medical Department of the University of Vermont.

The conditions present in a case of chronic catarrhal inflammation of the endometrium are enlargement, softening, and congestion of the uterus, increased succulence of, and the growth of moss-like vegetations on, the uterine mucous membrane, thickening and congestion of the cervical mucous membrane, and not infrequently enlargement, thickening, congestion, and dropsy of the tubes. The uterus is usually dislocated posteriorly, there is a congestion of all the pelvic organs, and a thick tenacious muco-purulent discharge from the uterine and cervical mucous membrane.

The general symptoms are lassitude, sleeplessness, loss of appetite, constipation, pain in the sacral region, which is increased by walking or driving, dragging pain in the abdomen, profuse painful menstruation (usually; although the flow may be scanty), and mental disturbance.

Examination through the speculum reveals a relaxation of the vagina, an ill-smelling leukorrheal discharge, erosion and eversion of the cervix, and retroversion of the uterus. With the sound we find the uterus enlarged and sensitive, and that the mucous membrane bleeds very easily. Occasionally digital examination reveals enlargement of one or both tubes, and tendernesss of the ovaries.

The treatment usually adopted in such cases includes rest, tonics, laxatives, hot douches, thorough curetting, tampons bearing either glycerin, boroglycerid, glycerole of tannin, glycerin and iodin, or tincture of iodin, and in some cases it is deemed necessary to employ severer methods, such as cauterizing the uterine cavity with nitric acid or caustic potash. I have followed this plan of treatment for years, with varying success, but usually the treatment had to be continued for a long time, the improvement was slow, discouraging alike to patient and physician, and I finally discarded it altogether and adopted a plan the basis of which is drainage. To illustrate, allow me to present one of a number of cases:

Mrs. X., twenty-six years of age, has been married nine years, and has borne one child now seven years old; she has had no miscarriages; she came to me complaining that for four years she had suffered with pain in her back and abdomen, leukorrhea, loss of appetite and strength, irritability of temper, and sleeplessness. Upon questioning her I learned that her bowels were constipated, moving once in three or four days; that she suffered so greatly at her menstrual periods that she was obliged to keep her bed three or four days; that the flow was profuse, lasting from seven to ten days, and that she frequently vomited her food. She was anemic and greatly emaciated. Examination showed the uterus enlarged (depth 3¼ inches); the cervix slightly lacerated, eroded, and everted; the left tube was somewhat enlarged, the uterus and both ovaries extremely tender. The uterine mucous membrane bled freely, although I used great care in introducing the sound. There was also a profuse muco-purulent discharge from the uterus.

My treatment was as follows: The patient was ordered to bed and given a saline laxative. The next day she was etherized, the vagina thoroughly washed out with hot water, the cervix mopped out with a hot 5 per cent. sodium bicarbonate solution and carefully dilated to the extent of an inch. The uterine cavity was then carefully washed with the hot soda solution, and gently curetted with a blunt curet. A large amount of fungus growth was removed, which caused considerable bleeding. The uterus was then filled with a strip of iodoform-gauze (cut ½ x 1 inch wide); a quantity of gauze was also left in the vagina around the cervix. The gauze was held in place

by a dry cotton tampon. There was little pain following the operation, but slight uterine contractions caused some uneasiness, which was relieved by a mild anodyne. Forty-eight hours afterward the tampon and gauze were removed, the uterus and vagina washed with the soda solution and again packed as before. From the third day the patient was up and about her room and suffered no pain whatever. The tampon and gauze were renewed every forty-eight hours during the first week and every seventy-two hours during the second week, when treatment was interrupted by menstruation. To the patient's surprise she suffered very little during the menstrual period; the flow was greatly lessened in amount and lasted but four days. Three days after menstruation I found the cervix contracted to nearly its former size, and I again dilated it. The dilatation was rendered almost painless by first applying the Faradic current—one pole in the cervix, the other on the abdomen—for about ten minutes, which softened the cervix and made it much more easily dilatable. The gauze was again introduced and allowed to remain forty-eight hours, when the patient removed it, gave herself a hot vaginal douche, and came again for treatment. From that time until she was discharged the gauze was introduced twice each week and allowed to remain forty-eight hours each time. At the end of five weeks of treatment I found the uterus normal in size, free from tenderness, no leukorrhea, and the enlargement in the left tube had disappeared.

She tells me now (four months afterward) that she feels in every way better, that she is relieved of her constipation, that menstruation is normal, that appetite has returned, and that she sleeps as well as ever. She has also put on considerable flesh and her general appearance is greatly improved.

The advantages of this plan of treatment are, first, that it removes the danger of puncturing the uterine walls, always present when the sharp curet is used; second, it shortens the time the patient is under treatment; third, the gauze by its presence excites uterine contractions, which lessen the congestion, thereby assisting in reducing the enlarged uterus to the normal size; fourth, the gauze again, by its presence, brings about a thinning of the uterine discharge; and this, fifth, allows it to be drained off as fast as it is thrown out; sixth, as the muscular fibers of the uterus are continuous with those of the oviducts, contractions of the former must necessarily be accompanied by contractions of the latter, and hence any accumulation of mucus in the tube would be carried by that contraction to the uterus and drained off by the gauze; seventh, the cervix remains permanently dilated, which facilitates the flow of menstrual blood; eighth, by draining off the contents of an enlarged tube, we do away, in many cases, with the necessity of celiotomy.

Many cases require curetting with a sharp instrument, owing to the presence in the uterus of fungous growths that cannot be otherwise removed, but the majority of cases will yield to drainage. Again, thorough curetting should not be undertaken by one inexperienced in the operation, as there is danger that he may scrape away not only the mucous membrane and a part of the muscular wall, but that he may unconsciously perforate the wall and set up a fatal peritonitis.

When the cervical laceration is so extensive as to demand an operation for its repair, the treatment I have suggested will prepare the parts for the operation in less time and much more satisfactorily than the treatment by douches and medicated tampons.

STRANGULATED LITTRÉ'S HERNIA AT THE FEMORAL RING, FOLLOWED BY SLOUGHING OF THE INTESTINE, WITH EXTRUSION OF A SCYBALOUS MASS WHICH BECAME ENCAPSULATED.

BY JOHN B. ROBERTS, A.M., M.D.,
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A WOMAN, aged twenty-eight, native of Poland, noticed during the fifth month of her second pregnancy, which was about a year before she came under my observation, that a swelling the size of a thimble appeared in her left groin. This varied in size at different times, and disappeared when the patient assumed the recumbent position. The enlargement persisted after the birth of her child, and remained in its previous condition until two weeks before I saw her. Then her bowels became very much constipated, and she suffered from violent attacks of nausea and vomiting. From that time she had had no natural movement of the bowels, which had been moved only by the aid of rectal injections which were ordered, by a physician, to be taken daily. For a week previously to the time this history was taken there was no movement of the bowels whatever, notwithstanding the rectal enemata spoken of, and for some time before that date only a very small amount of feces had been passed. She had taken no solid food for two weeks, had little appetite, and slept very little. The tumor grew steadily larger and more painful, but there was no vomiting after the first attack. She says that a physician who saw her two weeks ago told her that she had rupture.

On the night of her admission to the Woman's Hospital, which was January 26, 1893, repeated rectal enemata produced a free evacuation. When the patient was brought to the institution her sufferings were extreme. An oblong swelling was observed in the groin, in the region of Poupart's ligament. This was red and tender, and looked very much like a suppurating bubo. No vulvar lesion of a venereal character was discovered, and no history of any such condition was obtained. The lungs and heart were normal. The urine had a specific gravity of 1030, was acid, and contained no albumin and no sugar; microscopic examination showed some pus-cells, epithelial masses, uric-acid crystals, and blood-cells. The left labium was swollen and inflamed, and was continuous with the inflamed mass in the left groin. There was found a small laceration of the cervix uteri, but the uterus was normal in size, and movable. Percussion over the swelling in the groin gave a tympanitic note, but as the tumor was painful to the touch, this was only noticed after etherization. At no time was there any connection found between the intestine and the swelling in the groin.

The site of the tumor was rendered aseptic by thorough cleansing and sponging with a solution of mer-

curic chlorid, and a careful incision, about one inch in length, was made into the tumor over its most prominent point. An abscess-cavity was entered, and fetid gas and a large quantity of thin and extremely fetid pus escaped from the wound, together with broken-down tissue and old clots of blood. Upon irrigation of the cavity with a solution of mercuric chlorid (1:5000), a large quantity of such material was washed out, together with what appeared to be a portion of intestinal wall or the collapsed walls of a cyst. A rounded mass about the size of a small walnut was also washed from the wound. Its external surface consisted of a grayish tissue, which, when incised, showed the contents to be a dark, tarry, granular substance of fecal odor. The finger of the operator was carried into the cavity, and it was found that the abscess extended downward through the femoral canal into the pelvis. No bowel or opening into the bowel could be detected. It was decided, after thoroughly cleansing the cavity, to pack it loosely with iodoform-gauze. Antiseptic dressings were applied and the patient was placed in bed in good condition.

Directions were given for cleansing the cavity twice daily with a solution of corrosive sublimate (1:10,000) and re-dressing with iodoform-gauze.

At the time of the operation, I thought that an abscess had been formed by inflammatory involvement of the tissues surrounding a strangulated Littré's hernia, which had become gangrenous, or that the tumor resulted from a pelvic abscess which had communicated with the bowel and permitted the entrance of fecal matter into the sac. The former supposition was proved by the pathologist's report to be the correct one.

Examination of the specimens was made by Drs. Formad and Van Gasken. The rounded mass proved to be inspissated fecal matter, and contained particles resembling tomato-seeds, pepper, and other articles of food. The sac or membranous mass was found on section to be a portion of intestine.

The patient made a prompt recovery, and is now (March 3d) up and about. She seems perfectly well. The temperature seldom went above normal after the operation; and on February 24th the wound was, according to the notes, healed. After the operation, some other masses of feces were washed from the wound during the irrigation practised twice daily.

It is evident that the section of the circumference of the intestinal wall, which was strangulated, sloughed away, permitting masses of hardened feces to escape into the hernial sac, and that the intestinal opening became closed. Finally the scybalous feces became surrounded in one instance with a sort of capsule; and then an abscess occurred around the fecal masses and the portion of the bowel which had been detached at the point of constriction when strangulation happened.

POST-DIPHTHERIC PARALYSIS OF BOTH EXTERNAL RECTI MUSCLES.

By HARRY FRIEDENWALD, A.B., M.D.,
LECTURER ON OPHTHALMOLOGY AND OTOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

The occurrence of eye-symptoms during convalescence from diphtheria has long been known. It was formerly placed in the great category of amblyopia. But Donders showed that the visual disturbance was usually remedial by convex glasses, and that it depended on paresis of the accommodation. This form of post-diphtheric paralysis is quite often met with, though not as frequently as paralysis of the pharyngeal muscles. It is characterized by being bilateral, and unaccompanied by mydriasis (*i. e.*, due to paralysis of the sphincter iridis).

There are other forms of post-diphtheric ocular paralysis beside the one just mentioned. The extrinsic muscles may become affected, but this occurs much more rarely than the form first named. Cases of paralysis of the abducens, of the oculo-motor, and even complete paralysis of all of the ocular muscles, have been described; still there are not many on record.

The case to be related belongs to the class of paralyses of both external recti muscles, which may be monocular or binocular.

R. G., a female, five and a half years of age, came for treatment March 12, 1893. She had had a sore throat six weeks before, which had lasted three weeks. The throat-trouble had not been severe, but she had been very weak after the attack. Three days before coming, diplopia had set in. There was paresis of both external recti muscles, especially of the left, and as a result convergent strabismus of about 25°. Neither eye could be brought far enough to the temporal side to hide the sclerotic on the outer side of the cornea. The mother was very anxious and feared that an operation was necessary. A very favorable prognosis was given, for the trouble was evidently post-diphtheric paralysis. Dr. Clagett, who had treated the child during its illness, has kindly informed me that, at the time, he considered the attack one of mild tonsillitis and pharyngitis, and that he was not able to find any diphtheric membrane. The child was treated with syr. ferri iodid., and rest, and was seen at short intervals. On March 27th, her mother brought her, and stated that she had gotten perfectly well as suddenly as the affection had made its appearance. Three days before, she still had had diplopia, but now there was none. The lateral movements of both eyes were perfect —the cornea reached the outer canthus on both sides. The duration of this affection was sixteen days, the onset three weeks after the primary disease had left her. This is in accord with the few cases described by others.

Special attention is to be called to the fact that the patient had had a very mild attack of diphtheria, so mild as not to have been recognized as such by one of the most competent and experienced physicians of our city. But post-diptheric ocular paralyses result from slight as well as severe attacks. A case of post-diphtheric paralysis of the accommodation, which recently came under my observation, had followed what was considered a "slight sore-throat." Our literature abounds in such cases.

The prognosis of this affection is extremely favorable. Cure usually results in a few weeks, or in one or two months. The treatment consists in tonics. Some give great praise to electricity.

Ernst Jendrassik has been made professor of neurology at the University of Budapest.

THE TREATMENT OF LUMBAR CARIES.

BY BENJAMIN T. SHIMWELL, M.D.,
ASSISTANT PROFESSOR OF SURGERY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

THE great difficulty in the treatment of caries of the spine lies as much in the inability to secure perfect drainage as in the fact that the disease is due to constitutional taint. Tuberculous bone-disease is always amenable to treatment, if so located as to allow of perfect care—that is, removal of offending material and the maintenance of the part in a perfectly or nearly perfectly aseptic condition.

The anatomic situation of the vetebræ to a certain extent precludes surgical interference. The treatment has been to keep up the general condition by appropriate remedies, opening of the psoas-abscess, and attempting to maintain an aseptic state.

There presented in my service, within a week, two cases of psoas fistulæ, both having a pronounced discharge. In the first case I made an opening below Poupart's ligament, with the fistula as the center of the incision. After passing through the superficial tissues down to the iliac fascia, I began to separate this from the muscles below, and working carefully inward, raising it upward as I proceeded. While the denuded bone could be felt with a long probe, I found I could not reach it with the fingers. I then made an incision to the outer side of the erector spinæ muscles down to the posterior leaflet of the transversalis fascia, through this and the quadratus lumborum, and worked to the vertebræ; making a free communication with the lower opening and establishing drainage. Having failed to do any good, except the provision of more perfect drainage, I proposed to change the location of the incision in the second case. In this one it was commenced above Poupart's ligament, at about its middle, then curved upward to near the ribs, with the convexity outward. When the transversalis fascia was reached it was separated, as in the other case, without any difficulty, until the promontory of the sacrum was reached. I then made an opening posteriorly as in the previous patient, only larger. I was now able to pass one hand from below, the other through the lumbar opening, and make a complete inspection of the lumbar vertebræ.

The incision made in this manner, with complete separation of the fascia, allows any interference without risk of tearing through into the peritoneal cavity or the wounding of any neighboring structures. The bone can be curetted, and the parts thoroughly washed and drained. In both of these cases the wounds were packed with gauze. Although in the second case the openings were of considerable extent no sutures were used, the object being to allow of after-packing and the filling up of the denuded surface by granulation.

Approximation of the edges would have interfered with the after-treatment by causing retention and increasing the difficulty of packing.

Both cases did well. The operation commends itself by its advantages and the ease with which it is performed. It is also applicable to cases of retro-peritoneal abscess and to growths that arise in this region.

1253 SOUTH SEVENTEENTH STREET.

MEDICAL PROGRESS.

Unilateral Paralysis of the Recurrent Laryngeal Nerve from Implication in Tuberculous Glands.—FINLAYSON (*Archives of Pediatrics*, vol. x, No. 9, p. 759) has reported the case of a girl, four and a half years old, who presented a peculiar cough, resembling the most extreme form of hoarse cough met with in aneurismal disease complicated with laryngeal paralysis. Examination of the larynx disclosed an absence of swelling, ulceration, or other morbid condition of the laryngeal mucous membrane. There was, however, abductor paralysis of the left vocal band, which remained fixed in the middle line, while the right band moved freely. The symptoms and physical signs pointed to consolidation and softening from tuberculous disease, the left lung being particularly involved. In the absence of tuberculous disease of the larynx, the conclusion was arrived at that the case must be one in which the recurrent laryngeal nerve had become pressed upon by enlarged bronchial glands or involved in pleural adhesions. The child was extremely rhachitic and the family history was strongly tuberculous. The peculiar cough continued, utterance being given to curious hoarse, whining cries when anything was wanted. The child spoke little, but the voice was not specially hoarse. The temperature was at times high, but extremely low temperatures were also frequently found. On one occasion fluids were returned through the nostrils. No tests for anesthesia were employed, but it was noticed that the irritation caused by the laryngeal mirror was remarkably well borne. After an illness lasting about five months, as far as cough was concerned, death took place. Upon post-mortem examination both lungs were found to be tuberculous. The left pneumograstic nerve was adherent to a much enlarged and caseating gland, but could be traced down to the level of the root of the lung without much apparent alteration of structure. The recurrent laryngeal nerve was intimately connected with and involved among some caseating lympathic glands almost from its origin, so that it could only with difficulty be traced around the aorta. It appeared to be spread out and its substance involved in the infiltration. The larynx presented no noteworthy abnormality. The pericardium was completely adherent, and the visceral layer was almost completely beset with yellow tubercles. There had been a partial organization of tissue between the visceral and parietal layers. The parietal layer presented small, white tubercles, scarcely at all caseous. There were also extensive adhesions between the peritoneum and the omentum.

Epilepsy due to Porencephalus.—KOCHER (*Corr.-bl. für Schweizer Aerzte*, 1893, No. 15, p. 527) has reported the case of a girl, nineteen years old, who presented a deep depression in the right frontal region, resulting from the application of the forceps at birth. From the age of two years there had been a left lateral curvature of the spine, as well as some distortion of the left hand and some weakness in the lower extremity. At the age of twelve years epileptiform convulsions began to occur, setting in with a cry, followed by a fall and loss of consciousness, but without motor manifestations. The first and second occurred on the same day; the subsequent

ones at intervals of considerable length. After a year convulsive movements, involving the left side of the face, the left arm, and the left leg, were noticed during the attacks. At the age of seventeen years trephining was performed in the situation of the indentation in the skull, and a cavity containing almost seven ounces of clear fluid and communicating with the lateral ventricle was found. Drainage by means of a glass tube was maintained for three months. Only two paroxysms occurred during the time of drainage, the tube being removed because there was no further flow. But one attack occurred in the following two months. Then there were no attacks for nearly a year. At this time menstruation failed to take place, and the attacks recurred. At the same time the loss of power upon the left side progressively increased and contractures formed. Treatment with sodium bromid had but a transient effect. The scalp over the site of the previous operation was incised and a drainage-tube introduced, giving exit to clear fluid. An intercurrent attack of pneumonia was attended with a severe epileptiform convulsion, followed by an increase in the palsy. The mental condition now displayed signs of deterioration. Upon recovering from the attack of pneumonia the flow of serum from the drainage-tube, which had been diminished during the attack, increased. The girl was soon restored to her previous condition. The drainage-tube was permanently removed after the expiration of six weeks. In the subsequent four months no attack occurred. The cessation of the attacks is ascribed to the occurrence of permanent changes in the left cerebral hemisphere, in conjunction with the drainage employed, and under the influence of an acute infectious disease.

The Pathogenesis of Hepatic Abscess.—In the course of experimental observations, Zancarol (*Revue de Chirurgie*, 1893, No. 8, p. 671) found that the injection of dysenteric stools of a cat, containing amebæ, into the intestine of twelve other cats, was followed in six cases by the development of hepatic abscess dependent upon the presence of streptococci; in 11 of the cats dysentery developed, in 7 with amebæ in the evacuations and in 4 without amebæ. In the intestines of these animals was found the ulceration characteristic of dysentery. In none of the animals were amebæ found in sections of the bowel, while in 11 of the 12 streptococci were found in the depths of the intestinal mucous membrane. The injection of hepatic pus, sterile by culture, into the rectum in 7 cats was followed by the development of abscess of the liver in 2, purulent infiltration in 3, and dysentery in 4. The injection of pure cultures of streptococci from these inoculated animals into the intestine in two cats caused dysentery in one, with recovery after the lapse of forty-four days, and dysentery in the other, with death after the lapse of sixty-seven days. Upon post-mortem examination ulceration of the large intestine was found, together with cicatrices and streptococci in lungs and liver. Injection of a pure culture of streptococci into the ischio-rectal fossa of a cat was followed by the development of dysentery. Upon post-mortem examination a peritoneal effusion was found, with ulceration and edema of the walls of the small intestine. A pure culture of streptococci was obtained from the blood of the liver, as well as from the blood of the heart, the pericardium, the gall-bladder, and the peritoneum. Injection into the intestine of dysenteric stools from man, containing amebæ, was followed by the presence of amebæ in the intestine, but after death by the presence of streptococci in the spleen. The large intestine was in a state of exfoliation and congestion.

Successful Operation upon a Splenic Abscess in a Child.—Sendler (*Deutsche Zeitschrift für Chirurgie*, Bd. xxvxi, Heft 5, p. 536) has reported the case of a girl, four years old, of good family history and previously never ill, who, without known cause, began to fail in health. The child was languid, without appetite, vomited occasionally, and from time to time suffered with diarrhea. A fall down steep stairs was immediately followed by pain in the left hypochondrium and repeated vomiting. The pain became progressively more severe and a swelling formed in this region. At the same time, the general condition suffered correspondingly. It could not be learned whether or not there had been fever, but there was no knowledge of chills. The skin covering the swelling was smooth and unchanged in color. The mass was immobile and yielded deep fluctuation. There was no evidence of involvement of lungs, pleura, or heart. It was recognized that an abscess existed, but its origin was not clear, although implication of the spleen received consideration. At all events, operation was believed to be indicated, and was accordingly undertaken. A free incision was made below and parallel with the left costal arch, revealing an abscess-cavity, with thickened walls adherent to the abdominal parietes, and containing inspissated pus of cheesy consistence. The abscess was about as large as a small hen's egg and occupied the body of the spleen. After the sac was evacuated a rubber drainage-tube was introduced into the cavity, the overlying tissues were sutured, and an antiseptic dressing was placed over all. Recovery ensued without complication. The etiology of the abscess could not be determined, although it is believed that it existed at the time of the fall, which resulted in its rupture, with the formation of inflammatory adhesions.

Hypodermatic Alimentation.—Caird (*Edinburgh Medical Journal*, No. cdlix, p. 205) has reported the case of a man who for three years had suffered from gastric catarrh and had received great relief from washing out his stomach. For five months there had been increasing difficulty in taking solid food and in passing the stomach-tube. Finally, only fluids could be taken; and on examination a stricture was found at the cardiac extremity of the esophagus. Gastrostomy was proposed, but declined on account of the great weakness and emaciation. Nearly twenty-five pounds had been lost in weight in two months. The temperature was rather subnormal. But little of the fluid taken by the mouth was retained, the greater part being rejected. Some nourishment was administered by the rectum. In the hope of increasing the strength and securing sufficient improvement to warrant the performance of gastrostomy, the subcutaneous administration of sterilized olive-oil was begun. Intra-muscular injections in the gluteal region caused no discomfort, and for a week the patient received three or four ounces in this manner, experiencing appreciable benefit; so that gastrostomy was undertaken under the

local anesthetic influence of cocain. The operation was unattended with shock or pain. The stomach was opened with a tenotome, and a catheter was introduced for feeding purposes. The patient's temperature rose a couple of degrees after the operation, but he did not improve as had been anticipated, and in six days he suddenly collapsed and died. Upon post-mortem examination an annular epitheliomatous stricture at the cardiac extremity of the esophagus was found. There was also some thickening and ulceration about the pylorus, one of the ulcers having given way into the peritoneum.

Bilateral Empyema in an Infant Thirteen Weeks Old.—CASSEL (*Deutsche medicin. Wochenschr.*, 1893, No. 32, p. 768) has reported the case of an infant, thirteen weeks old, that for ten weeks had presented symptoms of broncho-pneumonia consequent upon an attack of influenza. The child was pale and emaciated, its respirations short, shallow, and accelerated to fifty-six in the minute; the pulse regular, but frequent. Physical examination disclosed signs of an encapsulated pleurisy upon either side, posteriorly and inferiorly, which upon puncture was shown to be purulent in character. Neither pneumonia-cocci nor tubercle-bacilli could be found in the pus, although streptococci were present. A few days later an incision was made on either side in the sixth interspace in the axillary line, and twenty-four ounces of pus were evacuated from the left pleural cavity and eleven ounces from the right. The child withstood the operation well and was better for a short time, but the suppuration persisted, with hectic fever and loss of flesh. After the lapse of more than a month a small portion of the sixth and seventh ribs on either side was resected, but the child only survived ten days longer. At the post-mortem examination the left pleural cavity was found obliterated, except in the area of the empyema, which communicated with a cavity as large as an apple in the lower lobe of the left lung. The remainder of the lobe contained many caseous masses. The right pleural cavity was also completely obliterated, while the lower lobe of the right lung contained a large cavity, and the remainder of the lung numerous caseous masses. Tubercle-bacilli were demonstrable in the contents of the cavities. The bronchial glands were enlarged, and on section displayed caseation.

THERAPEUTIC NOTES.

The Action of Scopolamin Hydrobromate.—From a comparative study of scopolamin hydrobromate, ILLIG (*Münchener medicin. Wochenschr.*, 1893, No. 33, p. 617) concludes that this drug, even in weak solution, is more prompt in action than atropin; in strong solution it may at times surpass atropin in mydriatic action; but the continuance of the action, as well as the ultimate activity, of the strongest solutions of scopolamin allowable is considerably less than that of atropin. Scopolamin is, therefore, not to be considered upon a therapeutic equality with atropin, and certainly not upon a higher plane, in cases in which atropin is well borne. In case of idiosyncrasy to atropin, however, scopolamin is to be considered as the best substitute, as even after long-continued use no unpleasant secondary phenomena are observed. Scopolamin is also a useful substitute in cases in which a mydriatic is required, but in which at the same time an increase in the ocular tension is contraindicated. Cocain must continue to be the preferable mydriatic for diagnostic purposes, as the action of scopolamin persists for too long a time.

Physical Rest in the Treatment of Chlorotic Anemia.—As the result of clinical experience, TAYLOR (*Practitioner*, September, 1893, p. 161) recommends the employment of physical rest in the treatment of chlorosis. The rationale of the procedure depends upon the fact that there is a diminution in the number of red corpuscles, which, besides, individually contain a deficient amount of hemoglobin. By thus sparing the blood a certain amount of functional activity restoration to the normal is facilitated. It is further suggested that chlorosis is, as a rule, the result of exceptional demands upon the system at the time of puberty, and that rest at this time affords the organism a means of meeting these unusual conditions. Other measures usually employed, such as purgatives, iron, and nutritious food, are not to be ignored. The same plan of treatment is likewise well adapted to other forms of anemia, and particularly when there is a tendency to dilatation of the heart, with dyspnea and edema.

The Treatment of Erysipelas.—KÖSTER (*Centralblatt für klinische Medicin*, 1893, No. 38, p. 793) has treated upward of fifty cases of erysipelas by covering the affected parts and the adjacent skin for a short distance by means of a brush with a moderately thick layer of white vaselin. Over this is placed an ordinary piece of linen (if upon the face, suitable openings being made for the eyes and nose) and finally a gauze bandage is applied with moderate firmness. The vaselin is renewed twice a day. The results obtained have been entirely satisfactory, comparing favorably with those obtained from other means of treatment. In most cases critical defervescence took place on the second or third day, and the pain and tension soon subsided. Relapses were not more common than after other methods of treatment.

For Coryza.—

℞.—Acid. carbolic. pur. } . . āā ℥ijss.
Aquæ ammoniæ }
Alcoholis . . . . . ℥v.
Aquæ destill. . . . . ℥j.—M.

S.—Inhale several drops for a few seconds from a piece of bibulous paper.

HAYEM, *Rev. de Lar., d'Otol. et de Rhin.*, No. 18.

For the Diarrhea of Tuberculosis.—

℞.—Acid. tannic. . . . . gr. vj–xij.
Calcii phosphat. . . . . ℥j.—M.
Ft. chart. no. xx.
S.—Take four or six daily.

Centralbl. f. d. ges. Ther., No. 7; *Corr.-bl. f. Schw. Aerzte*, No. 16.

Delirium Tremens due to Chloral.—BALLET (*Le Mercredi Méd.*, No. 31) has reported a case presenting all of the manifestations of delirium tremens as ordinarily seen in the course of alcoholism, but dependent upon the excessive use of chloral.

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SATURDAY, OCTOBER 21, 1893.

SUNLIGHT AND SANITATION.

IT is not a mere effort at alliteration that leads to the association of these terms. In the earlier ages of human history the sun was worshipped as the source of all earthly existence and action, and modern science has proved that from a merely material point of view this is true, and probably we do not yet fully appreciate the influence that the light, heat, and electricity emitted by the sun exercise upon the earth.

A belief in the sanitary and therapeutic effects of sunlight has long been held. The general experience of mankind has demonstrated the beneficial effects of light and air. The contrary effects of deprivation of these are among our commonest observations. Ingenious suggestions of sun-baths and roof-hospitals have been proposed in medical journals from time to time, and the organizations for securing brief outings for the children of our large cities are among the most substantial and practical charities of the present time.

The methods at present available for studying sanitation are in many respects exact. Especially do we find that all questions relating to the destruction of infection are capable of determination with a positiveness that was entirely unattainable some years ago. While much uncertainty may still exist as to the identity and relationship of some specific microbes, we can no longer doubt the extended part that microbic life plays, and that conditions which are inimical to it are practically conditions of disinfection. We must, therefore, regard with much interest the results of recent investigations by different observers, tending to show the marked action which direct sunlight exercises on bacteria. A short time ago, in noticing some publications by Pettenkofer's pupils, attention was called to a paper on the self-purification of streams, in which it was shown that running water, under the influence of diffused daylight, is materially purified. It is not unlikely that a portion of this action is due not to a direct interference of sunlight, for such an effect seems paradoxic, but to the decidedly stimulating action, which causes the microbes to develop more actively and thus run their life-course more speedily. It is certain that a knowledge of such action must be not only reassuring but it also affords indications for sanitary engineering. Pollution of running streams in densely populated districts is almost certain to occur, and the knowledge that a protected flow through a limited course will result in self-purification will serve to allay some fears. The dogmatic statement occasionally uttered by sanitarians, that a river once polluted will not again become clean, never had any satisfactory foundation in observation, and may now be considered as much too sweeping. Engineers will also recognize the advantage of open channels over closed ones in the transportation of water.

Another very interesting and important feature of this question is that relating to solid materials carrying infection. Several observers have noted that infected articles of merchandise are often rendered harmless by simple exposure to light and air. Among the most recent data in this respect are those furnished by STERNBERG, who has shown how quickly the cholera-microbe is killed by exposure to these influences. On ordinary textiles it lives for but a short time. From these observations we learn to modify our fears of infection through the mails or by such merchandise as old rags. We recognize also that in combating such a disease as cholera a great amount of good may be accomplished by simply hanging infected articles where free airing and sunning are attainable.

Indirectly, sunlight has an important bearing on sanitation, and that is as an aid to cleanliness. Obscurity covers a multitude of sins. Cleanliness ought to be pursued for its own sake; but, unfor-

tunately, this is not always the case, especially when circumstances are such as to enable the uncleanliness to be concealed or overlooked. In the construction and arrangement of our houses, whether on a large or a small scale, every effort should be made to place those parts which are necessarily associated with uncleanliness under the best light. It is curious to note how long the custom has been just the opposite. Sinks, dust-bins, water-closets, etc., are usually placed in dark corners. Sinks and washstands are generally enclosed so as to furnish a closet in which rubbish is certain to be kept. A due regard for sanitation as well as for decency indicates that these arrangements should be placed at the most favorable point for securing light and air. It will then be far less easy to neglect them and to permit them to become unclean. We may hope that the time is past when a water-closet will be placed in a cellar or at the end of a long dark alley-way, or boxed in with fine wood-work that becomes a nest for vermin and a harbor for filth. The cellar should be on top of the house!

A further thought that grows out of these considerations is in regard to the disadvantage of shade around houses. Intelligent farmers have occasionally inveighed against the practice of surrounding country houses by a dense clump of trees, but we still see this error frequently committed. In our cities, except at special places set apart as parks and as a boulevard ornamentation in very wide streets, trees are often out of place and serve both to disfigure the view and to shut out needed light and even air from offices and residences.

CARBOLIC ACID AND PAPAYOTIN IN THE TREATMENT OF DIPHTHERIA.

WITH the knowledge of the etiology of diphtheria that we possess it will be readily understood that any mode of treatment, in order to be successful, must be directed first against the dislodgment of the causative microörganisms from their local nidus, or at least the inhibition of their activity; secondly, to the elimination of the poisons generated or to their neutralization; and, finally, to the restoration of the organism to its original condition. In cases in which complications of a purely mechanical nature arise, such as laryngeal obstruction, surgical measures will yet, as heretofore, be required. It is hoped to attain the first of these desiderata by the local application of antiseptic agents, such as methylene-blue, carbolic acid, hydrogen dioxid, and various inhalations. It has also been found that good results are secured from the topical application of digestants, such as pepsin, trypsin, pancreatin, and papayotin, the mechanism of the efficacy of which, however, further than their digestive action upon the membrane, has not been made entirely clear. Recent observations by LEVY and KNOPF (*Berliner klinische Wochenschrift*, 1893, No. 32, p. 771) would, however, make it appear that, of these agents, papayotin at least subserves a more important purpose, in that it displays the property of neutralizing the activity of the toxic matters generated by the diphtheria-bacillus. The same property, no doubt, belongs to the other ferments named. In order to secure the best results from this use of papayotin, however, it was found necessary to first make topical applications of a germicide. With this end in view, a mixture containing five parts of pure liquefied carbolic acid and ten parts of papayotin in one hundred parts of water was employed. With this solution an application was made by means of a brush every ten minutes during the first two hours, and subsequently at intervals of two hours, by night as well as by day. The applications were made gently, without any attempt to bring away the membrane. The results are said to have been most gratifying, much more so than the figures would indicate. With the topical treatment was conjoined the use of an ice-collar, generous inhalations of steam, and the administration of stimulant in the form of wine. The cases, being seen in hospital, were of grave type. Fifty-three cases were treated in the manner outlined. In thirty-six of these (71 per cent.) recovery took place; in fifteen (29 per cent.) death ensued. Among the complications present in the fatal cases were croupous pneumonia, pulmonary and pleural tuberculosis, repeated hemorrhage after tracheotomy, and broncho-pneumonia; while in the cases in which recovery took place there was observed involvement of the nares, laryngeal stenosis, albuminuria, measles, croupous pneumonia, and abscess of the naso-pharyngeal cavity. Comparative observations showed that not only was the death-rate lower than common and the proportion of cases in which tracheotomy was necessary smaller, but the membrane also disappeared more rapidly, and a larger number of cases appeared to be saved from the necessity of tracheotomy, while some patients were saved that, in the absence of the treatment, must have perished.

JOHN HUNTER.

To honor and cherish the memory of its great men adds strength and dignity to a profession. One hundred years ago, on the 16th of October, in John Hunter there died the greatest anatomist and pathologist the world has seen, the man in whose faculties reason and observation were blended as they had not been since Aristotle. The creator of the science of comparative anatomy, the founder of scientific surgery, a physiologist of such wide observation that his researches covered the whole range of animal and vegetable life, the originator of the modern science of pathology, he stands in the history of our profession with a genius *nihil simile aut secundum*.

Hunter not only remodelled the very fabric of our knowledge of the structure and functions of living beings in health and disease, but some of his brilliant conceptions in geology and embryology foreshadowed, indeed actually express, ideas that we regard as very modern. Von Baer's law that the embryo in development passes "through life of lower phase," he expressed in so many words. A broad, comprehensive survey of nature, in which, though "the beauty of the plan and the necessity of the sequence are not always perceptible," all things in order move, led him to study aberrant forms and deviations from normal structure. Buckle has so clearly drawn Hunter's position in this relation that we give his words: "To generalize such irregularities, or, in other words, to show that they are not irregularities at all, was the main object of Hunter's life, and was the noblest part of his mission. Hence, notwithstanding his vast achievements in physiology, his favorite pursuit was pathology, where, the phenomena being more complex, the intellect has more play. In this great field he studied the aberrations of structure and of function in the vegetable as well as in the animal world. . . . . By sweeping through this immense range of thought his mind attained to such commanding views of the philosophy of disease that in that department he is certainly without a rival. As a physiologist he was equalled, or perhaps excelled, by Aristotle; but as a pathologist he stands alone, if we consider what pathology was when he found it, and what it was when he left it."

In an age of differentiation we miss these broad-minded men, who could both see and think. The hedge-rows between which we walk permit of progress and of vision in one direction only. Beyond lie pleasant fields, into which the enormous extensions of modern science make it increasingly difficult for us to wander; but the study of the works of a great master like Hunter will not only lead us (whether anatomist, surgeon, physiologist or pathologist) into pleasant ways of thought, but will even add a cubit to our professional stature in the very remembrance that such a man practised the same art as ourselves.

EDITORIAL COMMENTS.

Tobacco Mania.—It is scarcely an exaggeration to estimate that the American people spend about five hundred millions of dollars for tobacco each year. Every man who can afford it feels it incumbent upon himself to buy only the most expensive cigars; those who can ill afford it, take pride in being lavish with "a good brand"; the poorest can find money for tobacco, even though they have to ask charity for such things as medical attendance and "Sunday breakfasts," whilst the gamins hunt the gutters for "stubs." And not only the ragamuffins, alas! but well-dressed school-boys have learned the nasty habit. The writer has observed hundreds of Philadelphia boys on their way to school, and has been shocked to see a large proportion scrutinizing all the gutters and side-walks, and pouncing with avidity upon every bit of cigaret or cigar-stub to be found. No boy really likes to smoke, but does it because he desires to be as big-appearing as the men. And now the women are to ape the fashion! In Russia the railways have to supply special smoking-cars for women, and in England it is held stylish and aristocratic for ladies to smoke. The reason for all this is beyond scientific explanation, but the financial objection is evident to everyone, while the esthetic objection is no less apparent; but it is the physician who sees the physiologic objection, the vicious crop of future diseases that is being planted and watered with reckless improvidence. Why could the smokers not have machines, smoke-cylinders with an exhaust-fan, to do the smoking for them, something after the manner of Oriental prayer-mills, thus saving much trouble and health-injury, while at the same time wasting the money? But let the machine consume all its own stubs, so as to check the formation of nauseous and dangerous habits in the young.

Dr. Reeves and the "Amick Cure."—The United States Grand Jury at Chattanooga, Tennessee, has ignored the bill in the criminal suit for libel instituted against Dr. James E. Reeves for his denunciation of the so-called "Amick Cure for Consumption" as quackery and fraud. There is still a civil suit pending, but Dr. Reeves is afraid that it will not be pressed, as the rules of civil suits will permit him to introduce testimony in support of his statements which in criminal proceedings might have been fought out. He says that he welcomes the opportunity "to expose the vile thing," and that if he once gets before a court with his testimony there will be nothing left of the fraud.

Dr. Reeves is to be congratulated for a display of

courage in standing up for the right, which is unfortunately rare among medical men to-day. The very mention of the words "libel suit" causes many to close their mouths tight lest they be suspected of taking part in the reprobation and exposure of the nostrum-traffic and other forms of quackery and imposture. The number of so-called medical journals that have given advertising and reading columns to the exploitation of this "Amick" nostrum is a humiliating spectacle. The continued violation of the rule forbidding advertising of nostrums by the trustees of the *Journal of the American Medical Association* is another sight that should bring the blush of shame to the cheeks of every member of the great association defiantly misrepresented by its elected officers. To think that the absence of one man from the Milwaukee meeting caused the matter to be passed over in silence is an evidence of general pusillanimity that makes courage like that of Dr. Reeves stand out in bold relief.

Effect of After-Pregnancy on Damages Recoverable for Personal Injury.—When a married woman sustains a personal injury, and her physician does not caution her to avoid pregnancy, and there is no evidence that her injury was such that it was not prudent for him to do so, her pregnancy occurring several weeks after the accident, is not necessarily, and as a matter of law, sufficient to justify a reduction of damages. So holds the Supreme Court of Wisconsin in the case of Sallady *v.* town of Dodgeville (55 N. W. Reporter, 696). If the after-pregnancy may have prolonged the injury or delayed her recovery, the damages which she would otherwise be entitled to recover should not be reduced because of such pregnancy. Her duty after the accident would be to take reasonable care of herself, and to avoid, so far as reasonably possible, doing anything which would tend to increase, prolong, or render permanent her injuries, sufferings, or disability. The mere doing of an act which would prevent or retard her recovery would not of itself be a ground for reduction of damages. To have that effect it must be a negligent act, and whether an act is or is not negligent is a question for the jury, and not of law for the court. So, in the case under consideration, the measure of duty, the court said, was ordinary care and diligence in the adoption of such measures of care or prevention as the case required and were within her knowledge or power.

Voice Without a Larynx.—At a meeting of the College of Physicians, on the 4th inst., Dr. J. Solis-Cohen exhibited a patient who speaks without a larynx; and the College desired the President to appoint a committee to investigate the manner in which the voice is produced.

The larynx and the uppermost tracheal ring of this patient was removed by Dr. Cohen some eighteen months ago for an intraneous and extraneous laryngeal adenocarcinoma. The upper end of the trachea was drawn forward and then stitched to the skin, so that there has been no communication since the operation between the lungs and the mouth. Yet the man speaks with a fairly well modulated voice, sufficiently audible for all practical purposes.

He breathes without a tracheal canula, through the upper orifice of the trachea, which presents externally. When he is about to speak the skin above the trachea becomes distended into a small vesicle of air, the contents of which are propelled in a stacatto-like manner against some structures just at or above the orifice of esophagus, and which Dr. Cohen takes to be the horizontal fibers of the inferior constrictor muscles of the pharynx.

Elevation in the Treatment of Leg-ulcers.—If there is one condition in surgery that is more obstinate than another in yielding to treatment it is a chronic leg-ulcer. Means and measures without end have been employed, but none has proved infallible. There is one form of procedure, however, whose efficacy makes it deserving of more common employ than it has hitherto received, and that is elevation. The subject receives consideration in an editorial in the *Canada Medical Record*, August, 1893. The affected member is not merely to be placed upon a level with the rest of the body, but must be elevated and the head depressed. This is best accomplished by raising the foot of the bed and also placing the ulcerated extremity upon an inclined plane or splint. The usual dressings may also be employed in accordance with special indications. The method is exceedingly trying to the endurance of the patient, but the result is adequate recompense. After the ulcer has healed, some form of elastic support, such as a bandage of rubber or flannel, should be worn. We cannot add too much praise for the success of this procedure.

Our Consul at Bagdad is a most worthy physician, and a man of exceptional intelligence and scientific attainments. From Bagdad there is shipped annually to the United States between five and ten million pounds of wool. According to our governmental regulations this wool must be disinfected, a labor that requires some four hundred trips to the disinfecting station from the consulate, and an equivalent of two hundred or more hours of active labor in a temperature of 120° or higher. For this frightful drudgery, to keep us from being cholera-stricken, the entire salary or fees will be $100 or less. This we glean from a private letter from our colleague. It is outrageously shameful that such a thing should be allowed. Dr. Sundberg is in his own way doing a vast amount of medical missionary work in this wretched place, whither he has been driven by his scientific zeal. There is no salary attached to his consular office. Is it not possible to make the office a salaried one, or to do something to help a noble physician struggling under adversity and in want, in order that we may be healthy?

"Some Reasons why our Prescriptions Fail."—A recent contributor to a homeopathic journal undertakes to give "Some Reasons why our Prescriptions Fail." Surely this man must be a wolf in sheep's clothing, for the expressed opinion of orthodox homeopathists would ordinarily lead one to think that homeopathic treatment never fails. More convicting still is the explanation. The failure is ascribed to two general sources: "(1) Incompetency of the prescriber and the worthlessness of his remedies, and (2) the present incompleteness of our materia medica." The homeopathic sectarian has usually praised his materia medica as being so much richer

than that of scientific medicine—some eight hundred agents, we believe, against about half the number we use. Truly appetite grows by eating! But how strange it all sounds to hear any confession such as this terribly modest one from our Hahnemannian friends!

Frank Advertising.—A method of offering commissions to physicians adopted by a Philadelphia firm of manufacturers and dealers in trusses is unequivocal. Blotting-pads are sent all physicians (even oculists!) praising the trusses, the "lady attendant," etc., but the most emphasized part of the advertisement is this, in double caps:

"IF YOU WILL SEND US YOUR PATIENTS WE WILL RECIPROCATE WITH A CHECK BY RETURN MAIL."

This is a notice to the traders in medicine, but it is also a notice to physicians where *not* to send patients.

The Turkish Bath in the United States.—The thirtieth anniversary of the establishment of the Turkish bath in America was recently celebrated in Brooklyn, N. Y., Dr. Charles H. Shepard having inaugurated the bath in October, 1863.

REVIEWS.

ANATOMY: DESCRIPTIVE AND SURGICAL. By HENRY GRAY, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School. The drawings by H. V. CARTER, M.D., Late Demonstrator of Anatomy at St. George's Hospital, with additional drawings in later editions. A new American from the thirteenth enlarged and improved English edition. Edited by T. PICKERING PICK, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; Senior Surgeon, Victoria Hospital for Children; Member of the Court of Examiners, Royal College of Surgeons of England. In one imperial octavo volume, pp. 1129, with 635 large engravings. Philadelphia: Lea Brothers & Co., 1893.

AGAIN the advancement of anatomic knowledge demands a revision of a book which, since 1857, has been the recognized text-book used by the great majority of English-speaking students of medicine. The successive issues, of which this is the thirteenth, have been utilized to perfect the work by subjecting it to the scrutiny of the foremost anatomists of a generation.

In no previous edition have the changes and improvements in every portion been so great as in this. The text has been most thoroughly revised; the splendid series of illustrations have been reëngraved wherever additional clearness could be attained, and have been reinforced with new engravings wherever completeness has seemed to demand it. The work is printed both in black and in colors. The illustrations, so long and favorably known as the most effective and intelligible anatomic drawings accessible to the student, in their present improved shape fully maintain this supremacy.

The editor has faithfully followed the lines laid down by the author, and has endeavored to render the work more practical and of more use to the student, who will hereafter have to apply his knowledge of anatomy to his practice of surgery, by introducing a considerably increased amount of surgical anatomy, and by pointing out the bearings of anatomy on the practice of surgery. In both of these objects the distinguished editor has accomplished his work in a most thorough manner, and the teacher of to-day presents to his pupil a work which is so like the original that his teacher presented to him years ago that there is always a pleasure in recommending Gray. Moreover, the surgical additions increase the value of the book and place it abreast of the times. This is particularly true of the brain and nervous system, which in the former editions were far in arrear. The muscular system, especially the muscles of the back, is not so readily acquired by an arrangement into layers as by grouping them together as taught by the Continental anatomists.

The section on the Anatomy of the Female Organs of Generation has been revised by Dr. Leonard Remfry, and will be found to be fully up to the times. The illustrations in this portion are all new, as are also many in the section upon the Male Organs of Generation. Indeed the illustrations added in this edition are not only equal to those which have made the work the standard, but are even better and clearer.

There is only one fault with *Gray's Anatomy*—it is a little too large for convenience; it has many repetitions; for surgical anatomy it is not so much used in the dissecting-room as are Holden, Weisse, and Heath. Taking everything into consideration, however, the present, thirteenth, edition is a great improvement upon former editions, and one which will be found worthy of the favor heretofore accorded to it as the *standard text-book on Anatomy*.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION FOR THE YEAR 1892. Volume IX. Edited for the Association by OGDEN C. LUDLOW, M.D. Published by the Association, 1893.

THIS imposing volume of 834 pages proves that scientific work of a high standard and careful regard for clean conduct can well go hand-in-hand. To point out individual papers of excellence would be somewhat invidious. We can only cite one or two that happened to be upon subjects of present interest to the reviewer. Zera J. Lusk communicates valuable observations on "Mitral Stenosis in Pregnancy," which appeared in THE NEWS of January 14, 1893, p. 41. Prior to the fifth month he would produce abortion. If the sixth month is already past, the patient must remain at perfect rest, under the constant care of a physician, and her husband or the nurse be instructed in the use of chloroform. Stockton writes on the "Etiology of Gastric Ulcer" (NEWS, January 14, 1893), Charles Phelps details an elaborate study of "Injuries to the Head and Brain," and Gouley makes a strong plea for the early extirpation of tumors (NEWS, December, 23, 1892). Blake White reports a striking case of "Successful Pneumotomy for Tuberculous Abscess and Gangrene" (NEWS, January 14, 1893). Many other equally good papers are presented. The Association is to be congratulated on its work.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Volume VIII. 1893.

THE volume of Transactions under review is replete with papers of interest, and contains some of very high

order. It is impossible to even enumerate the titles, but we may indicate as among the more valuable contributions the paper of W. Gilman Thompson, on Addison's Disease; that of Forchheimer on the Intestinal Origin of Chlorosis; Theobald Smith's studies of the Etiology and Pathology of Texas Cattle-fever. J. C. Wilson contributes an interesting report of Three Cases of Pulsating Pleurisy, with abstracts and an analysis of sixty-eight cases gathered from literature. A. Lawrence Mason presents an elaborate study of Subphrenic Abscess simulating Pyo-pneumothorax, and S. J. Meltzer and William Osler contribute to the same subject. The volume is completed by a review of the Functions of the Thyroid Gland, by Francis Kinnicutt, and papers on Myxedema and its Treatment with Thyroid Extract, by J. J. Putnam, M. Allen Starr, and W. G. Thompson.

The society deserves commendation for the uniformly high character of the papers and the discussions.

RECENT DEVELOPMENTS IN MASSAGE. By DOUGLAS GRAHAM, M.D. Physicians' Leisure Library. Pp. 128. Detroit, Mich.: Geo. S. Davis. 1893.

THIS is an interesting summary of the latest contributions to the literature of massage, and is supplementary to the author's treatise published in 1890. It is valuable for its convenient translations and condensed reports of the work of a large number of foreign writers who have employed massage in medical practice much more widely than is customary in the United States. The investigations of Maggiora, of Turin, are reported with illustrations that show very beautifully the power of massage to restore the strength of muscles weakened by physical and mental labor. The experience of Zabludowski, Haig, Eccles, Breda, Castex, Millard, Casati, Poliakow, and many others is given, but unfortunately without an index.

GUY'S HOSPITAL REPORTS. Edited by W. HALE WHITE, M.D., and W. H. A. JACOBSON, M.A., M.Ch. Volume XLIX, being Volume XXXIV of the Third Series. London: J. & A. Churchill, 1893.

AMONG the papers contained in this volume Dr. Fisher's "Study of Peritoneal Sanguineous Cysts, and their Relation to Cysts of the Pancreas," will attract attention. Smith and Durham's thorough essay on "Glycosuria and Surgery" brings together a number of important facts, and will probably become a standard of reference for surgeons. F. Taylor writes on "Some Cases of Malignant Disease of the Chest and Abdomen," Hale White discusses the "Prognosis of Ascites of Various Causation," and Golding-Bird gives an interesting retrospect of "Urethral Surgery." A memoir and portrait of John Hilton add to the value of the volume.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, AT ITS FORTY-THIRD ANNUAL SESSION, HELD AT WILLIAMSPORT, 1893. Volume XXIV. Published by the Society. Philadelphia, 1893.

AMONG the able papers in this volume that on "Heart-disease or Kidney-disease," by Dr. Tyson, and "New Remedies in Diseases of the Skin," by Dr. Shoemaker, deserve special mention. Dr. Diller writes interestingly of "Hypnotism and Suggestion." Dr. Dixon presents a thorough and practical "Address on Hygiene." Dr. Nutt's paper on "Intubation" is timely and full of meat. Many of the other papers, most of which have been published in the journals, are likewise of value.

MISSOURI STATE MEDICAL DIRECTORY: Containing a carefully revised list of Physicians, Dentists, and Druggists, together with the Colleges, Hospitals, Societies, and Medical Journals of the State, arranged by counties for the convenience of Society Secretaries. Pp. 120. St. Louis: Published by *The Medical Fortnightly*, 1893.

WE are grateful for this useful little book, and wish that every State could boast of such a publication.

TRANSACTIONS OF THE VERMONT STATE MEDICAL SOCIETY FOR THE YEAR 1892. Published by the Society. Burlington, Vt., 1893.

THIS is a neatly printed and creditable volume. It contains a sympathetic memoir of Dr. Joseph Draper, and a number of interesting papers on medical topics. The President's Address on "Preventive Medicine," by Dr. Calverly, is an able plea for better public sanitation.

SPECIAL ARTICLE.

THE DISSIMILARITY BETWEEN PHYSICIANS AND HOMEOPATHISTS.

A Reply to the Presidential Address of Dr. John B. Roberts.[1]

BY SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL.

THIS communication is presented at the request of a number of members of this Society who desire a record to be made of their dissent from some of the views advanced by Dr. Roberts in his paper entitled "Points of Resemblance Between Us and Homeopathic Physicians." The subject-matter having been discussed by me at length in a paper read before the Society some years ago,[2] I may be pardoned for confining myself on the present occasion to a brief review of a few of Dr. Roberts's "Points" and to the introduction of but one counter-point.

I have read somewhere an apologue which, slightly modified to suit the present occasion, runs thus:

In the country of the Houyhnhyms, concerning which land, its inhabitants and their customs, an interesting and reliable account has been left by the late learned and ingenious Gulliver, there was at one time an agitation in favor of what was termed "liberalization of the Constitution." In furtherance of this movement there was delivered before the General Assembly, by an eminent and thoroughbred stallion, an able discourse entitled "Points of Resemblance Between Us and Jackmules."

With the great generosity and candor that were its

[1] Read before the Philadelphia County Medical Society, October 11, 1893.

[2] Proceedings, vol. ix, p. 278, 1889. THE MEDICAL NEWS, October 19, 1889.

author's characteristics, this discourse, while admitting that all mules were not alike, and that the earlier breeds had been quite obnoxious, yet claimed that in recent times a great change had taken place; that, indeed, mules were becoming every day less mulish; and it counted in favor of "the great body of mules at the present time," even down to the least fraction of an inch by which their ears had been shortened, and the last hair in the little bunch at the end of their tails, every point wherein they had never so slightly departed from the anatomy of the more lowly line of their parentage, and approached to the form and features of the noble line that they shared with the speaker. Many of the younger Houyhnhyms were moved by his eloquence to respond to the generous impulses of the advocate of fraternization; and it appeared as if his views might prevail. At this juncture a veteran "stud" arose, and with great gravity and deliberation spoke about as follows:

"My noble friend has shown most clearly and convincingly that many Jackmules have done their best to imitate Us. Let me even admit for argument's sake that he has succeeded in establishing many points of similarity. But he must grant me permission to call attention to one point of difference. There was never a mule yet but he was sired by a jackass."

Dr. Roberts pays a handsome and well-deserved tribute to the personal and social qualities of educated homeopathists. I can cordially indorse all that he has said upon this topic. The question of scientific or ethical truth, however, is an impersonal one, and should be so considered. The fact that Washington was a slaveholder did not make slaveholding right; and neither the high character of Dr. Roberts, nor that of many members of the homeopathic fraternity, can make white black or black white, make straight that which is crooked, or make crooked that which is straight.

The question before us is one of simple honesty, and to decide it needs neither learned citation of authorities nor casuistic subtleties. Either the name "homeopathist" means something or it means nothing. If it is meaningless there can be no legitimate reason for retaining it. If it has a meaning it means separation from and opposition to progressive medical science; it means an assertion of belief in a certain well-defined dogma opposed to reason and to experience; an assertion, moreover, made for effect not upon medical colleagues, but upon the lay and uninstructed public. It is only right, then, to hold those who make use of that name to all the implications of the voluntarily assumed designation.

A professed homeopathist can no more sever himself from the history of his sect than a mule can sever himself from the lineage of his sire. Without jackasses no mules; without continual Hahnemannian fecundation in each generation, no homeopathy.

I agree fully with Dr. Roberts that neither "a physician's political, religious, or social beliefs and affiliations, nor his opinion that in 'similars' he sometimes finds a remedy of value, should disqualify him" from membership in this Society. But who has ever urged that any of these things should be disqualifications? That one's possible "opinion that in 'similars' he sometimes finds a remedy of value" does not act as a disqualification Dr. Roberts himself shows in the further course of his paper, quoting, moreover, the language of the American Medical Association: "neither is there any article or clause of the Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinion and practice."

What Dr. Roberts either fails to see, or refrains from commenting upon, is the fact that to hold the "opinion that in 'similars' one may sometimes find a remedy of value" is quite a different matter from labelling oneself "homeopathist." To believe that in electricity "one sometimes find a remedy of value," is not, therefore, to be an "electropathist;" to use water as a therapeutic agent in suitable cases does not make one a "hydropathist." The difference is so obvious that to enlarge upon it would be to doubt the intelligence of the Society. Equally great is the difference between one who sometimes uses a remedy that in a healthy person would produce effects resembling some of the symptoms of the disease, and one who assumes a title which, if it means anything, means that his everyday practice is designedly based upon the so-called "law of similars." In words Dr. Roberts ignores this difference; nevertheless, he practically admits it, or there would have been no necessity to write his paper. It does not require an elaborate thesis to demonstrate that twice two is four. One needs not eloquently plead for the removal of a disqualification that he admits does not exist.

Dr. Roberts is doubtless correct in his repeated assertions that "very many of those whom the public regards as homeopathists have comparatively little faith in the infinitesimal doses of Hahnemann, or in the infallibility or universality of his law," and that "to-day there is comparatively little belief in or practice of homeopathy as advocated by Hahnemann." A good lawyer would have hesitated to make such admissions in a paper written in defense of homeopathists. They prove, however, the sincerity of our former President; a proof strengthened when he further states that "the real homeopathy . . . . pays no attention to the microscopic and chemical changes in tissues and organs, but believes in selecting a remedy which . . . . causes symptoms similar to . . . . the totality of the symptoms seen in the patient."

But if this belief, which Dr. Roberts very properly characterizes as "unscientific and unworthy of credence," is, in Dr. Roberts's own language, "the real homeopathy," what kind of homeopathy is that which he says is practised by the great body of those "whom the public regards as homeopathists?" It must be an unreal, a false, a fraudulent homeopathy. And Dr. Roberts's proposition, reduced to plain English, is this: "We cannot admit to membership in this Society the real homeopathists because they are loyal to a dogma which is unscientific and unworthy of credence; but we ought to admit the false homeopathists because they only *pretend* allegiance to that dogma.

Mr. President, I have more respect for the honest, simple-minded donkey than I have for the disingenuous and uncertain mule.

There is, however, one proposition in Dr. Roberts's paper with which I desire to express my full and unqualified assent, and upon the principle enunciated in which we can all, I think, find a common meeting-ground. I, for one, should be most happy to aid in

bringing about its incorporation into the organic law of this Society. Dr. Roberts says: "The test of qualification for membership should not be the college from which the applicant received his diploma, but an education enabling him to understand and appreciate the science of medicine and an honest purpose to treat his patients by all means and methods which experience, investigation, and research show to be serviceable."

With this opinion, let me repeat, I am heartily in accord. It is quite evident, however, that such an education as Dr. Roberts describes cannot be received in a sectarian school, despite the use of any number of scientific text-books; and one has only to read the first homeopathic journal that comes to hand to see that even among the "unreal" homeopathists, while they do have considerable knowledge of the empiric practices of physicians—which practices they copy more or less intelligently, very few have an adequate comprehension of the principles of scientific medicine. But the most certain evidence that the official representatives of homeopathy in Pennsylvania do not "understand and appreciate the science of medicine" has been given by their demand for the establishment of sectarian examining boards. Anyone who elects to go before such a board, thereby declaring his lack of acquaintance with scientific therapeutics and practice, and the limitation of his studies to the theories and methods justly termed by Dr. Roberts "unscientific and unworthy of credence" voluntarily excludes himself from the ranks of the profession; voluntarily enrolls himself as a sectarian. We certainly cannot accept the certificate of such a board as evidence of an applicant's possession of "an education enabling him to understand and appreciate the science of medicine and an honest purpose to treat his patients by all means and methods which experience, investigation, and research show to be serviceable." On the contrary, it is a direct evidence of partial and narrow education; of training limited to what Dr. Roberts has well-termed "unscientific and untrustworthy" theories and practice. If, however, a graduate of a sectarian college, after sufficient practical experience to compensate for his want of school-education, should desire to enter the ranks of the profession of medicine, and should evidence his sincerity, not only by abandoning his sectarian designation, but also by refusing to permit his patients to apply it to him; and if, after due investigation, the censors should report that he was in personal character, professional knowledge, and scientific spirit, worthy of admission to this Society, it would give me great pleasure to cast my vote in his favor.

To conclude: The great point of dissimilarity between physicians and latter-day homeopathists is the profession by the latter of adherence to a dogma that is not only "unscientific and unworthy of credence," and an insuperable obstacle to progress, but that they themselves do not half believe in; an "unreal" profession of faith that may serve to attract patients, but that cannot be considered straightforward. So long as any one voluntarily makes such profession he renders it impossible for self-respecting physicians to meet him upon equal terms.

If, however, one whose personal character fits him for membership in this Society, but who had formerly professed homeopathy, becomes convinced of his mistake, and desires to join the ranks of scientific medicine, he should be freely received; provided only that he repudiates any sectarian designation and gives to the censors satisfactory evidence of his professional attainments. More than this we ought not to ask. Less than this we cannot honorably accept.

CORRESPONDENCE.

ANNUAL MEETING OF THE NEW YORK STATE MEDICAL ASSOCIATION.

To the Editor of THE MEDICAL NEWS,

SIR: The annual meeting of the New York State Medical Association has just been held in this city. This being the decennial celebration, the meeting was extended from the evening of October 9th to that of October 12th, and included the usual full scientific program, together with a number of entertainments.

The President's Address was delivered on the first evening by Dr. S. B. Wylie McLeod, of New York County. This was followed by an address by Dr. John Shrady, in which he reviewed the work of the past ten years. He called attention to the fact that one of the most prominent features had been the holding of "prepared" discussions, following the practice instituted by the British Medical Association, and adopted by many of our most conservative medical societies.

In a paper entitled "The Prevention of Disease," Dr. James G. Porteous, of Dutchess County, spoke particularly of the methods by which tuberculosis is disseminated, and read the printed directions that he gives his patients. They were cautioned against spitting on the floor or in the cars, and were directed to use a cup or wide-mouthed bottle for a cuspidor, and to frequently wash this out with hot water. They were also advised to use individual table-utensils and table-linen, and to sleep alone in airy apartments, and not to kiss others. Well persons were reminded that tuberculosis is principally communicated by swallowing the germs or receiving them into wounds, and they were warned not to kiss on the lips *anyone* who has a cough.

In a discussion that followed the reading of the paper by Dr. E. D. Ferguson on "Nephrotomy and Nephrectomy," Dr. John Cronyn, of Erie County, cited a case in which for many years a lady had symptoms of stone only in the right kidney, yet the post-mortem examination showed that both kidneys contained large calculi. This illustrates some of the common difficulties in making the diagnosis in this class of cases. Dr. Ferguson and Dr. Gouley both expressed the opinion that cystoscopic examination and catheterization of the ureters were more hazardous than an exploratory incision, and at the same time were less satisfactory.

Dr. N. P. Dandrige, of Cincinnati, in a paper on "The Surgical Treatment of Pulmonary Cavities," said that this method could be employed with advantage in cases of abscess of the lungs, pulmonary gangrene, hydatid cyst, and of tuberculous and bronchiectatic cavities. The operation is often performed by mistake, under the supposition that the operator is dealing with a localized empyema. When there are adhesions between the pleura and the chest-wall, and the cavity is superficial, the operation is simple and involves but little risk. The position of the cavity is determined by means of an

aspirating needle, which is used as a guide for the knife. After incision the cavity is packed with iodoform-gauze.

The first afternoon was devoted to a "prepared" discussion on "Lesions of the Pleura," which was opened by Dr. John Shrady, of New York County. Referring to pleurisy with serous effusion, he said that the indications for treatment were to limit the exudation in the early stage, to allay pain, to keep the bowels relaxed, to reduce the fever, and to adopt such measures as were best calculated to promote absorption. When there is enough fluid in the chest to cause intermittent orthopnea, or when the fluid half fills the pleural cavity, or when after a month it shows no tendency to absorption, it is time to aspirate. The effusion may become purulent and yet give rise to no characteristic constitutional disturbance unless some of the pus is absorbed; hence one should be on one's guard. Dr. William McCollom, of Kings County, who continued the discussion, was inclined to attribute considerable importance to the streptococcus, the staphylococcus, and the pneumonia-coccus as etiologic factors, and he thought some of the discrepancies in the observations in this direction might be explained by the fact that these different observations were made at different stages of the disease. Dr. J. Blake White, of New York County, has noted an interesting clinical fact, namely, that the tendency to clear the throat when there is no local lesion is characteristic of pleurisy with adhesion, and that a dry, short cough points to adhesions high up in the chest, whereas if these adhesions are lower down, the cough will be more prolonged. Dr. Charles A. Leale cited several cases that showed how much can accomplished in empyema without surgical interference. There seems to be a sort of revulsion of feeling in regard to thoracentesis, for in this discussion, Dr. Thomas H. Manley, of New York, and Dr. Donald McLean, of Detroit, inveighed against its use. Regarding incisions into the chest in empyema, Dr. Dandridge said that while it was exceptional for him to treat empyema without incision and resection of the ribs, aspiration certainly possesses one important advantage, viz., that it maintains the negative pressure that so materially aids the expansion of the lungs.

Dr. Austin Flint, of New York, made some remarks in the evening on "Fermentative Dyspepsia." He is firmly convinced that fermentation in the alimentary canal is due to microörganisms, and consequently he favors the use of anti-fermentatives. An experience of nearly a year with bismuth subgallate had led him to look upon it as far superior to all other remedies of this class that he has employed. It may be given in doses of five grains, in capsules or in tablets. He had followed his father's well-known practice of giving salicin in these cases, and although the results in many cases were very satisfactory, they were not comparable to those obtained with bismuth subgallate.

Those who study the various methods advanced from time to time for amputation at the hip-joint will be interested in certain statistics presented to the Association by Dr. John A. Wyeth, of New York, regarding his well-known "bloodless method." He has collected thirty-nine cases in which the method had been pursued, and the reports are the more valuable, as they represent the work of a large number of operators of all degrees of skill. In thirty-five of the cases, the amputation was performed for disease, and in four for injury. Five of those operated upon for disease died, giving a mortality of 14 per cent.; and all of those in which the operation was performed for injury succumbed, giving a mortality of 100 per cent. It should be said, however, that the latter were chiefly cases of severe railroad, crushing injuries, and hence the mortality after any operation must necessarily be very high. The operation had been before the profession since 1890, and it spoke for itself.

The question of the voluntary commitment of the insane to asylums was brought up by a paper presented by Dr. W. D. Granger, of Westchester County. He said that at the present time the tendency is toward making asylums *hospitals*, and, as far as possible, individualizing the treatment. Certain insane patients will gladly seek the advantages of asylums if they can do so voluntarily. This has been the subject of legislation in several States, but the trouble has been that after the patients' admission to the asylum they have generally been deprived of their liberty, and treated in almost the same way as those committed involuntarily. The laws of New York State now permit insane persons who are in a condition to fully appreciate what they are doing to voluntarily commit themselves to family asylums, but no time is specified, the patient being allowed to leave whenever he pleases.

Dr. Gustavus Eliot, of New Haven, Conn., contributed an interesting paper on the treatment of enteric fever. He said that as the safety of the patient depends so much upon absolute rest of both body and mind, the physician should make it a rule in every case of fever to be sure that the disease is not enteric fever before giving the patient permission to get out of bed. This condition of perfect rest should be maintained for at least a week after the temperature, morning and evening, has reached the normal. He advised beginning the treatment by administering from seven to ten grains of calomel on alternate days for four days, and then following this by the administration of iodin and carbolic acid, well diluted. He was sure that the calomel treatment not only brings about immediate amelioration in symptoms, but it also really shortens the duration of the disease. Dr. George Douglas, of Chenango County, and Dr. John H. Martin, of Otsego County, also advocated the calomel treatment, and expressed their disapproval of giving alcoholic stimulants in enteric fever. Dr. E. R. Squibb said that the beneficial action of calomel in enteric fever was probably due to the fact that when it is ingested it is first converted into an albuminate, and then slowly decomposed into the bichlorid, so that its antiseptic action was called forth gradually but continuously. In order to secure this gradual action, calomel should be given dry on the tongue, so that it may be quickly converted in the stomach into the albuminate.

Dr. Donald McLean in presenting some surgical memoranda remarked that a large experience with ununited fractures of the long bones had taught him that the most common cause of non-union was excessive violence at the time of the fracture. In cases of amputation at the hip-joint he uses the aortic compressor, and greatly prefers it to Wyeth's method of controlling the hemorrhage.

Another interesting "prepared" discussion took place on the second afternoon, and was on the treatment of

appendicitis. Dr. Frederic S. Dennis, of New York, who opened this discussion, stated that about 50 per cent. of the cases of inflammation in the region of the appendix go on to resolution, and only about 11 per cent. relapse. He did not approve of operation unless urgent symptoms had existed without abatement for forty-eight hours. Errors in diagnosis are very frequent, even among experienced and eminent practitioners, and the operation cannot be considered in itself as free from danger, although some would have us believe it a very trifling affair. The fact that one instrument-maker in New York has sold within the past year six dozen special trusses for ventral hernia occurring after this particular operation is in itself very significant. Dr. John W. S. Gouley, of New York, took the same conservative position with reference to the treatment of appendicitis, but admitted that, while in at least half of the cases an operation is not required, there are times when a life might be saved by very prompt resort to operation. Dr. Joseph D. Bryant, of New York, as a result of numerous observations carried on in the dead-house of Bellevue Hospital, had found that a foreign body was present in the vermiform appendix in about 70 per cent. of all male subjects and 40 per cent. of females. The "McBurney point" can no longer be considered characteristic of appendicitis, for it has been found in other conditions, and besides this, examinations have shown that the position of the *caput coli* is very variable, and in a large percentage of cases is not in the immediate vicinity of this "point." If acute symptoms are present, he would not postpone operation longer than three days. Rigidity of the rectus muscle is, in his opinion, more reliable as a guide than the presence of a tumor in the ileo-cecal region. Of course, if the symptoms apparently indicated perforation, immediate operation was demanded. Dr. J. A. Wyeth favored an early resort to exploratory operation, for, not only did he consider this the safer course, but there also is less likelihood of ventral hernia following the early operation.

In speaking of the proper mode of introducing the male catheter into the bladder, Dr. Douglas Ayres, of Montgomery county, pointed out that by pressing down on the soft parts over the pubes, the suspensory ligament will be relaxed, and the introduction of the instrument in some cases greatly facilitated. Dr. Gouley exhibited an exact model in bronze of the catheter found in the ruins of Pompeii. It is of the sigmoid form, and is distinctly conical, and has a single eye near the vesical extremity. Dr. Gouley is of the opinion that the catheters at present made in this country are far superior to those of foreign manufacture.

A rather novel idea was brought forward by Dr. William Finder, of Rensselaer County, in a paper entitled "Researches on the Efficiency of Vaccina after Typhoid Fever." He had found that a number of persons who had been recently ill with enteric fever were especially susceptible to vaccination, and, after verifying these results by numerous observations extending over a number of years, he ventured to present these views to the profession, so that further observations might confirm or disprove the theory that enteric fever dissipates the protection conferred by vaccination. It is his practice now to revaccinate the patients after an attack of enteric fever.

As a sort of offset to the general enthusiasm over pelvic surgery, Dr. T. J. McGillicuddy, of New York, presented a paper entitled "A Plea for the Non-operative Method of Treating Dysmenorrhea, Pelvic Inflammation, and Pelvic Abscess." His plan is to stimulate the portal circulation by free use of hot water administered by mouth and by rectum, and thus promote the absorption of pelvic exudates. He took the position that pus can be absorbed, and that, therefore, one should not be too hasty in condemning such cases to operation.

In view of a circular-letter sent out by the American Medical Association asking for an expression of opinion as to the advisability of amending the Code of Ethics, the Association ordered the following communication to be sent:

"In reply to the notice that the American Medical Association had requested the State medical organizations in affiliation with that body to express their wishes in references to any changes in the Code of Ethics, the New York State Medical Association has to state that it has made that Code one of its foundation-stones, and that it is entirely opposed to any alteration therein. This is the result of a full reconsideration of the subject, and after an experience of ten years of organization under the Code."

Dr. Thomas D. Strong, of Chautauqua County, was elected President for the ensuing year.

NEW YORK.

THE RECRUDESCENCE OF LEPROSY, AND ITS CAUSATION.

To the Editor of THE MEDICAL NEWS,

SIR: As the readers of THE MEDICAL NEWS would scarcely comprehend the full scope and purport of my recently published volume, *The Recrudescence of Leprosy, and Its Causation*, from the brief notice in your excellent journal (August 26, 1893, p. 249), I shall be glad if you will kindly afford me space for a summary of my conclusions, the result of personal investigation in many countries where this terrible disease is endemic. I can prefer this request with the more urgency from the fact that many of the sufferers from leprous vaccination are absolutely friendless, while most of them are without political representation and are unable to plead their own cause. In the pursuit of my investigations I have been repeatedly entreated to bring their intolerable grievances before the English-speaking public through the press, with a view of reaching the ears of Parliament and other legislative bodies.

These conclusions are as follows:

1. That leprosy has greatly increased during the last half-century, and that it is prevalent in many places where it was formerly unknown.

2. That whilst the opinions of medical authorities and experts vary considerably on the subject of the contagiousness of leprosy, the preponderance of authority is in favor of the theory that it is not contagious in the ordinary sense of the term, but is communicable by means of a cut, sore, or abraded surface; and this view is confirmed by my own personal investigations.

3. That other alleged factors, such as malaria, a fish-diet, syphilitic cachexia, heredity, and insanitation, are

admittedly unequal to explain the rapid growth of the disease in certain of our Crown colonies and dependencies, as well as in other countries.

4. That on one point there is much agreement, and hardly any dissent, namely, the inoculability of leprosy; and that the view of leprosy as an inoculable disease, while it is most clear to those who take the malady to be due to a bacillus, is older than the bacteriologic evidence, and is not dependent thereon.

5. That the most frequent opportunities of inoculating the virus of leprosy are afforded in the practice of vaccine-inoculation, which is the only inoculation that is habitual and imposed by law; and that the evidence here adduced is calculated to show that vaccination is a true cause of the diffusion of leprosy.

6. That the official information collected by interrogatories and otherwise has not been hitherto of a kind to show how far vaccination has determined the amount of leprosy in recent times; and that any interrogatories that may be sent out in future should not be limited to ascertaining the effects as regards leprosy, of hypothetically "pure lymph." When on very rare occasions interrogatories have been submitted they have been framed to ascertain the results of a purely hypothetic system of vaccination, which is not anywhere discoverable in practice (*i. e.*, with pure lymph, and free from hereditary taint), and the replies are therefore futile and misleading.

7. That with the exception of two groups of cases—those adduced by Dr. Roger S. Chew, of Calcutta, and Dr. S. P. Impey, of Robben Island—those reported in this volume have not been the result of special investigations, but have cropped up accidentally in the course of medical practice, and in some instances have been published by practitioners with apologies to the profession for presenting such unwelcome disclosures.

8. That the increase of leprosy in the Sandwich Islands, the West Indies, the United States of Colombia, British Columbia, British Guiana, South Africa, and New Caledonia, has followed *pari passu* with the introduction and extension of vaccination, which in nearly all these places, without previous inquiry or demand from the inhabitants has been made compulsory.

9. That as leprosy is a disease of slow incubation, often taking years to declare itself, and in its incipient stages can be detected only by practitioners of large experience, it follows that, in countries where leprosy exists, there is great danger of extending the disease by arm-to-arm vaccination.

10. Leprosy being one of the most loathsome diseases to which the human race is subject, and being practically incurable, it behooves all interested in the public well-being to do their best to *prevent* its diffusion, and as a means thereto, to discourage the practice of vaccination on that ground, if on no other.

Yours faithfully,

WILLIAM TEBB.

DEVONSHIRE CLUB, ST. JAMES'S, LONDON.

Acknowledgment.—For the unfortunate physician (see MEDICAL NEWS, October 7th) we acknowledge the receipt from O., $10; G., $1; C., $1; M., $2; M., $10; E., $1.

SOCIETY PROCEEDINGS.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, held at the New York Academy of Medicine, Tuesday Evening, October 3, 1893.

DR. M. ALLEN STARR, PRESIDENT, IN THE CHAIR.

THE PRESIDENT read a memorial of Prof. Jean-Marie Charcot (see THE NEWS, October 14, 1893, p. 433).

DR. E. C. SEGUIN gave a few personal reminiscences of Prof. Charcot. He referred to the generosity of the great physician in placing at the disposal of his students his abundant materials and the use of his laboratories, and in allowing them to receive the full credit for their labors, instead of appropriating it to himself. Many of Charcot's pupils, Bourneville, Bouchard, and others, have been helped by him in every possible way to attain honorable positions. In disposition he was not quick, hasty, or mercurial. Every thought was carefully matured, and he collected his material for a long time before reaching or publishing his conclusions. He was averse to theorizing. He was a close analyst and a devoted follower of the inductive method of reasoning. Primarily, Charcot was a pathologist, and his reputation will always rest on his achievements in this field of medicine. His work in hypnotism, by which he was greatly fascinated in later years, can only be recorded as a mere fragment—a digression which in the future will count as nothing.

DR. SEGUIN also reported a case of generalized paresis ending in complete recovery. The patient was a boy thirteen years old, who was brought for an opinion as to the nature and prognosis of a singular condition of increasing muscular weakness, which had come on during the preceding eighteen months. The family history was fairly good. The boy's mother was of a nervous temperament and for a few months had been addicted to the chloral-habit. Of six children only one other, a sister, had had a nervous trouble, namely, a mild chorea extending over several years. There was no trace of muscular disease, atrophic or dystrophic, in the family. The patient's history, previous to the onset of this disease, was negative. At the age of six years he had a severe attack of albuminuria, which left no traces. Several years later he had what seemed to be a mild attack of articular rheumatism. The boy was active and daring, and had numerous falls, none of which, however, was followed by serious symptoms. There was a history of masturbation, carried on for several years. There was no history or evidence of metallic intoxication, nor at any time was there any indication of hysteria. The only positive causative element in the case was the self-abuse, which was discontinued at the age of twelve, when the boy himself noticed that he had slight difficulty in articulation. Five months subsequently to this the patient's symptoms were first brought to his father's attention by the fact that he twice fell out of the saddle and by his suddenly dropping the oars in a boat and acting for a few minutes as if paralyzed. Even before that, it was recalled, he had become rather awkward in buttoning his clothes and in using the knife and fork, and that after reading aloud for a few minutes his articulation became thick. Very gradually he lost his energetic ways and became awkward in everything; his

attitude had changed so that he stooped, the neck hanging down and the abdomen protruding. His facial muscles lost much of their expression and his laugh was constrained and unnatural. All of these symptoms developed and progressed very slowly. The boy was subject to "sudden collapses," as his father called them, characterized by a sudden loss of control over many muscles, resulting in falls or in dropping objects from the hand. These symptoms last named suggested *petit mal*, but this affection was excluded after careful observation. The symptoms were entirely of a motor character. There was no numbness, anesthesia, neuralgia, or psychic or trophic symptom. The organic functions were normally performed; the nutrition was good. The eyes were normal. The legs were apparently strong, and the boy could rise from the dorsal recumbent posture on a flat couch and also from a squatting posture, but these acts were performed feebly, slowly, and with great effort. The spine was not tender and presented no deviation, excepting an antero-posterior one. Local paresis of the muscles was demonstrable only in the extensor group of the right forearm. No muscles showed atrophy or hypertrophy. The knee-jerk was normal. There were no sensory symptoms, excepting on exertion a sense of fatigue in the muscles of the lips and tongue, as well as in those of the forearm. On electric examination the reaction of the nerves and muscles to both currents was found normal. The sexual organs presented no evidence of masturbation. The grasp of the dynamometer was with the right hand, 11; the left hand, 16.

During two years the boy improved decidedly in motor power and skill, and his height increased six inches. The treatment from the first, in the absence of any possible pathologic diagnosis, consisted in the systematic, long-continued administration of tonics, such as mercuric chlorid, phosphorus, arsenic, and strychnin. At the same time a mild faradic current was applied systematically every day. Also, from the first, a cold sponge-bath was ordered on rising or at bedtime, followed by a thorough dry rubbing and a manipulation of all of the muscles. Another part of the treatment consisted in gentle gymnastic movements of the hands, arms, trunk, and legs.

The case was lost sight of for nearly five years, when on inquiry it was learned that the boy was in the junior class at college, that he stood well in his class and excelled in wrestling and other athletic sports. The treatment advised had been faithfully carried out for nearly three years and was followed by gradual but continued improvement in the boy's condition. His weight became 166 pounds; the circumference of his chest in expiration, 33 inches; on full inspiration, 39 inches; the circumference of the waist, 31 inches; of the mid-thigh, 22 inches; of the biceps, 13 inches. His endurance was good and he was able to raise from the ground an iron rail weighing 600 pounds. His grasp on the dynamometer became with the right hand, 72; with the left hand, 53.

DR. B. SACHS said that in the first part of the report the case reminded him of a primary muscular dystrophy of the facial-scapular-humeral type, with perhaps some involvement of the lower extremities. Such a case has recently come under his observation, with many symptoms similar to those narrated. In cases of progressive primary dystrophy, particularly in pseudo-hypertrophic conditions, he has seen marked temporary improvement follow treatment, although never complete cure. Again, in Dr. Seguin's case there might possibly have been some nuclear trouble, with a mingling of symptoms pointing to the spinal cord or medulla. If the case was one of primary muscular dystrophy, the question arises whether the cure will be a lasting one. Dr. Sachs has seen a number of cases presenting a condition of pseudo-hypertrophy in which the muscular tissue first enlarges and then rapidly atrophies.

DR. GEORGE W. JACOBY suggested that Dr. Seguin's case might have been one of polymyositis ending in complete recovery, and followed by a secondary hypertrophy of the muscles.

DR. J. F. TERRIBERRY stated that it is against the laws of pathology to assume that an inflammatory process in the muscular tissue is followed by hypertrophy of the muscle, with increased force.

DR. E. D. FISHER said that, as the boy grew six inches taller while under Dr. Seguin's care, the lesion was probably not a spinal one.

DR. SEGUIN added that he was not prepared to advance the case as an instance of a muscular dystrophy in an early stage. Neither did it resemble a case of myositis. There was no pain; there was a general weakness, which was sometimes so pronounced that the boy was unable to hold objects in his hands, or he would lose all control over his muscles and fall to the ground.

NEWS ITEM.

Price of Pamphlets on Tuberculosis.—In THE MEDICAL NEWS of September 16 we said that the Pennsylvania Society for the Prevention of Tuberculosis would supply physicians with its pamphlets without charge. So great has been the demand that the funds of the Society will not permit this, and the Secretary (Mr. E. Leslie Gilliams, 806 Walnut street, Philadelphia) has informed us that he will hereafter be compelled to charge the nominal price of twenty-five cents a hundred, express charges or postage *not* included.

BOOKS AND PAMPHLETS RECEIVED.

Certificates of Death: Their Significance and Importance, as well as their Moral and Physical Aspect. By P. C. Remondino, M.D. Pamphlet. San Diego, 1893.

Case of Supra-pubic Cystotomy Performed to Secure Continuous Drainage of the Bladder. By Cephas L. Bard, M.D. Reprinted from the Southern California Practitioner, 1893.

Report of the Kensington Hospital for Women, from October 12, 1891, to October 10, 1892.

The Electric Light Current in Medicine and Surgery. By Wm. Scheppegrell, A.M., M.D. Reprinted from the New Orleans Medical and Surgical Journal, 1893.

A Study of the Cheyne-Stokes Respiration. By Samuel Wolfe, M.D. Reprinted from the Journal of the American Medical Association, 1893.

A Contribution to the Anatomy of Congenital Equino-varus. By Herbert L. Burrell, M.D. Reprinted from the Annals of Surgery, 1893.

Die Paralysis Spinalis Syphilitica (Erb) und Verwandte Krankheitsformen. Von Dr. Sidney Ruh. Deutsche Zeitschrift für Nervenheilkunde. Sonderabdruck.

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ORIGINAL ARTICLES.

A CASE OF DISLOCATION OF THE FOURTH CERVICAL VERTEBRA WITHOUT FRACTURE.[1]

BY A. M. HOLMES, A.M., M.D.,
OF DENVER.

IN clinical study the success of a diagnostician depends to a great degree upon the faculty of close observation of minutiæ and the ability to correctly interpret their meaning. In no department of medicine or surgery do we find a greater need for the exercise of this faculty than in that important class of cases wherein the functional activity of the cerebro-spinal centers has been impaired or destroyed, either through the various agencies classified as diseases, or through the more violent and sudden means inducing acute traumatism. In a very large percentage of clinical cases reported the accounts are so defective, lacking in precision and exactness of description, that the true nature of their lesion remains in doubt. On the other hand, there are those who will not accept any case as authentic, unless it is verified by a post-mortem examination.

The following case is presented for the consideration of this Society, from the fact of the comparatively rare occurrence of others of its kind, and on account of the distinct and characteristic symptoms accompanying it, so typical of this form of spinal injury. If such cases are properly studied, and the symptomatology correctly interpreted, they may be the means of throwing light upon some of the unsolved problems of neurology:

On February 2d, this year, at 6.30 P.M., the accident occurred which furnished the material for this paper. The patient, H. P., a male, aged forty-nine, weight 160, possessed an excellent physique. The previous health and family history were good. Being an engineer, it was his routine duty at the close of each day's work to climb to the top of a water-tank to shut off the water-supply for the night. For this purpose a ladder was placed loosely against the tank. On the evening named there were snow and ice on the ground, which caused the ladder to slip. The man fell backward a distance of sixteen feet, the back of the head and shoulders striking the ground. The fall produced instantaneous paralysis. The man was unable to move a muscle below the neck. He retained perfect consciousness, and was able to speak. The only pain of which he complained was localized, and in the lower cervical region, and was increased by movement or manipulation. He was carried to his home, only a short distance away, and placed upon a cot, in which position he remained until I saw him, two hours afterward.

I found the patient without pain, except in the back of the neck. Consciousness was not impaired. He had good control of the vocal organs, could speak distinctly, but in a weak voice, and with a slow, measured accent. To all appearances he seemed to be in a condition of extreme shock. His face was flushed, there was an anxious expression of countenance, the surface was cold, and the pulse at the wrist was not perceptible.

On placing my ear over the heart the action of that organ was found to be regular, but very weak, and only 36 per minute. The temperature under the tongue was 92.5° F. Thinking that there might have been a mistake, I took it a second time, using every precaution to prevent error, and found it the same. Respiration was exclusively diaphragmatic, very shallow, but regular, and only 10 per minute. The thoracic muscles were paralyzed. The upper part of the thorax remained perfectly stationary, while the diaphragm performed its functions normally.

There was total loss of sensation in all parts below the neck and shoulders, and not the slightest power of voluntary motion in either arm, the body, or the lower extremities. The muscles supplied by the brachial plexus were all implicated. The line of anesthesia extended around the body about two inches above the nipples. There was no line of hyperesthesia, but rather a gradual diminution from normal sensation to total anesthesia, covering a space of one or two inches, which might be termed "uncertain sensation." Partial sensation existed on the outer surface of each arm, reaching a lower point upon the left than upon the right. Soon after the accident the patient experienced a sensation of tingling in the fingers of the left hand. Well-marked priapism and retention of urine and feces existed. Sight and hearing were not affected.

With this formidable array of symptoms, it was very evident that we had to deal with a case of extreme pressure, or contusion of the spinal cord. It was also very evident that the lesion was below the origin of the phrenic nerve, as the functional activity of the diaphragm was not destroyed. It was also plain that the lesion was above the origin of the brachial plexus, as there was total paralysis of both upper extremities, and almost complete anesthesia.

I therefore proceeded to examine the spine, but previous to the examination I gave hypodermatically: Morphin sulph., gr. $\frac{1}{8}$, atropin sulph.,

[1] Read before the Colorado State Medical Society, Denver, June 21, 1893.

gr. $\frac{1}{200}$; trinitrin, gr. $\frac{1}{5}$, to relieve the pain and increase the force of the heart.

We then turned the patient on his right side, this being preferable to the left, on account of the weak condition of the heart.

Beginning at the occiput, I passed my finger slowly down the spine, pressing firmly against the vertebræ. When the space between the fourth and fifth cervical vertebræ was reached there was a distinct and abrupt depression, the more marked on the left side. Pressure of the finger on this point was extremely painful. The spinous process of the next vertebra below was quite prominent. Passing the finger further down the spine it was impossible to detect any other abnormal deviation or painful point.

I examined carefully for crepitus, but was unable to detect any, a fact that in itself was not sufficient to exclude fracture. There was some swelling of the muscles of the neck, but no indication of external contusion. The man was very muscular, and I found it quite difficult to distinguish the spinous processes, especially in the cervical region. In the left occipital region there was a contusion of the scalp, one inch in length, caused by the fall.

By a careful consideration of the foregoing history and symptoms, I gave a diagnosis of dislocation of the fourth cervical vertebra, with or without fracture, causing extreme pressure, and perhaps contusion of the cord.

In such cases the propriety of attempting reduction is not questioned by modern surgical opinion. Therefore, having the consent of both the patient and his family, I decided to attempt reduction at once, in order to relieve the compression, and as affording the only hope of restoring the function of the cord, and prolonging life. Considering the very low state of the vital powers, the administration of an anesthetic was believed to be contra-indicated.

Having placed the patient on his back, with the aid of four assistants I proceeded to exercise extension. With an assistant at each lower limb, and one at each shoulder, I took my position at the head, with one hand on either side, the forefinger of each hand resting below the inferior maxilla, and the other fingers supporting the neck and occiput. We then began gentle traction, which was slowly increased. When the extension and counter-extension reached the point that the body retained the horizontal position without touching the bed, a sudden jar was distinctly felt by each of us, and was plainly heard by all who were in the room. We then gently lessened our traction, and slowly lowered the body to the bed. Neither rotation nor flexion was practised, from fear that they might be the means of increasing the pressure on the cord. We were thus keeping within the bounds of conservatism, with the least possible risk for the patient. But if reduction had not been possible without them, I certainly would not have hesitated in resorting to them.

The man complained of no pain during the operation, and to all appearances suffered no depressing effects from it, being conscious during the entire time. Still being in the condition of shock, I ordered him to be surrounded with bottles of hot water, and brisk friction made over the body and extremities, placing also a strong sinapism over the heart, and a cantharides plaster over the seat of the injury. After an hour the pulse was quite perceptible at the wrist, but had diminished in frequency from 36 to 26. Six hours after the accident reaction was fairly established, the pulse at the wrist was stronger, the cutaneous surface warmer, the voice fuller and more audible, the respiratory act increased in volume and frequency, and the man began to experience a feeling of ease.

In simple *compression* of the cord due to dislocation the symptoms usually disappear promptly after the dislocation has been reduced. But upon making another careful test for the return of the functions of the cord, we found absolute loss of sensation, of voluntary motion, and of the reflexes. Therefore, I gave a grave prognosis, and insisted on having counsel.

Accordingly, on the following day, eighteen hours after the accident, Dr. H. T. Pershing kindly saw the case with me, and still later Dr. P. D. Rothwell. The patient was much the same as when I left him the night before, except that he was depressed by the awful consciousness of the approaching crisis. The pulse had increased to 72, and the respiration to 26. He had passed a fairly comfortable night; he slept several times with intervals of restfulness, and had occasional attacks of emesis. Retention of urine and well-marked priapism continued. We passed a silver catheter its full length, and failed to draw urine. The irritation of the catheter increased the priapism to such a degree that it deceived us into the belief that there was suppression of urine, and therefore we did not persist with other attempts.

Later in the day, twenty hours after the accident, Dr. Rothwell saw the patient, and found him very uneasy. He passed a long flexible catheter, and succeeded in drawing off over a pint of urine. Dr. Pershing carefully traced the line of anesthesia, and found it somewhat higher than on the night before. He also tested thoroughly for the deep and superficial reflexes, and has kindly furnished me with the following notes:

"The line of anesthesia ran, in front, between the first and second ribs; behind, along the spines of the scapulæ. On the right side it ran over the acromion; on the left it extended downward about two inches from the acromion, leaving a triangular space of normal sensibility over the deltoid muscle. There was total loss of both deep and superficial reflexes."

There was occasional emesis of a very peculiar variety during the first twenty-four hours. The abdominal and thoracic muscles took no part in the act. It was produced by an involuntary contraction of the diaphragm and the muscles of the stomach itself, to all appearances, without any effort or exertion on the part of the patient. Deglutition was not impaired. Liquids were given in small quantities at frequent intervals. The tongue when extended did not deviate to either side, and was devoid of any tremor. The muscles of the

face and neck performed their normal functions. The backward and forward movements of the head, as well as the lateral and rotatory movements, were not impaired.

One hour before death the line of anesthesia varied but little from that of the previous day. Priapism was slightly marked, though less than on the previous visits. The patient complained of feeling uncomfortable, and we passed a catheter, and drew off sixteen ounces of urine. The pressure of the distended bladder against the diaphragm, interfering with respiration, undoubtedly was the cause of the discomfort. In passing the catheter he did not feel the slightest sensation. When the instrument reached the sphincter vesicæ muscles it met with an obstruction. There being no history of stricture, it indicated that the sphincter vesicæ muscle was firmly contracted, and consequently not paralyzed.

Another very important point was also noticed in this connection. If in the latter part of the act the end of the catheter was raised above the level of the bladder the urine ceased to flow, but as soon as it was lowered the urine began to flow again. This would certainly indicate paralysis of the detrusor urinæ muscle, the elasticity of the bladder being alone sufficient to expel the urine when it was completely distended. The temperature had risen to 102° F.; the respiration was 28, the pulse 82. The man was perfectly rational. The voice was distinct, but he spoke with greater difficulty and less force. The face was much flushed. Respiration was very shallow; there were bronchial râles; the throat was filled with mucus; and there was inability to cough or expectorate. Death from asphyxia occurred forty-three hours after the accident.

The autopsy was conducted by Dr. Pershing twenty-four hours after death. There was a separation between the fourth and fifth cervical vertebræ, with complete rupture of all the ligaments and muscles of the right side, and separation to such an extent that the dura could be distinctly seen. The inferior articular process of the fourth vertebra passed forward and in front of the superior articular process of the fifth, lodging in the intervertebral notch between the body and the superior process of the fifth. Thus the interlocking of the articular processes maintained the dislocation, producing what Stimson terms "a complete unilateral dislocation." [1]

The cord and membranes were severely compressed between the lamina of the fourth cervical vertebra from behind, and the upper part of the body of the fifth in front, thus compressing them into nearly one-half of their former space. The meninges were not torn. There was no extra-dural hemorrhage. The entire cervical spine was removed, and has been preserved.

After the removal of the cervical portion of the spine, by using a little extension and counter-extension, rotating the upper segment, the parts could readily be displaced, the right inferior articular process of the fourth cervical vertebra slipping over and lodging in front of the superior articular process of the fifth. In reversing the order, using extension and counter-extension, and rotating the upper segment to the left, the parts went into position again with a distinct snap that could be plainly heard for a distance of several feet.

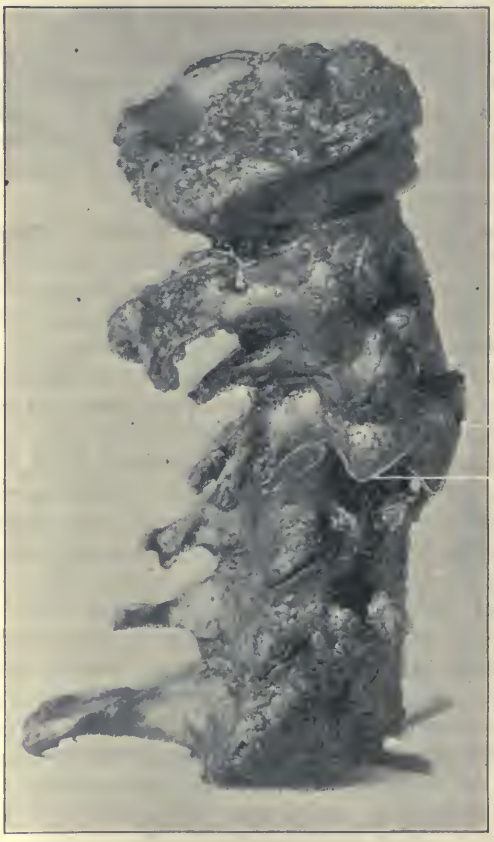
After removing the cord and membranes from the canal, the gross lesion showed distinctly where the crushing of the cord had taken place. A distinct circular constriction extended entirely around the cord at a point corresponding to the lower level of the fourth vertebra, or between the fifth and sixth cervical segments of the cord.

The cord has been preserved in Müller's fluid, but the pathologic analysis of its interior, showing the minute lesions by transverse sections, has been delayed on account of not wishing to destroy the identity of the gross lesion.

The discovery of the total absence of fracture was also a notable feature of the autopsy.

Dr. Axtell's notes of his examination of the cord are as follows:

On the anterior surface there is no macroscopic appearance of any trouble. On the posterior sur-



Specimen showing an anterior dislocation of the fourth cervical vertebra on right side.

a. Body of fourth cervical vertebra displaced forward.
b. Inferior articular process of fourth cervical vertebra.

face, opposite the fourth cervical vertebra, there is a depression in the cord, clean cut, looking as though a small tape had been bound over the cord. No inflammatory products are found in the membranes or on the cord. At the point of depression

in the cord it can be made to move readily, forward, backward, and laterally.

This is the only point where the cord can be thus bent. The cord has been imperfectly hardened in Müller's fluid. Thick sections of the cord just above and below the lesion present evidences of acute myelitis. The consistency of the cord is diminished, the bloodvessels are distended and the distinction between the white and gray matter is very slight. At the point of depression the cord is softened, and no sections can be made, as the tissue crumbles before the sharpest edge. Both the white and the gray matter seem to be a soft, crumbling mass, especially in the posterior half. Just beneath the membranes on the anterior surface the cord is of fair consistency.

Careful examination of the softened portion shows much granular matter, masses of myelin and numerous granule-corpuscles.

In this report I have endeavored to adhere as closely as possible to the true clinical phenomena. As a rule it is not well to generalize upon individual cases; but as the lesion is one of such rare occurrence, and the symptoms in this case were so typical and distinctly marked, and an autopsy also having been made to demonstrate the accuracy of the diagnosis and the character of the lesion, it seems worth while to make a brief review of some of the most important points.

In the first place the distinct vasomotor disturbance, indicated by the flushed face, the slow and feeble pulse, and the marked subnormal temperature would clearly indicate vasomotor paralysis, very probably due to injury of the cervical ganglia, situated on each side and in front of the cervical spine.

In spinal surgery the reflexes are among the most valuable diagnostic signs that we possess, although there is a wide difference of opinion among observers as to their diagnostic significance. Dr. Thorburn, of Manchester, England, who has made some excellent observations in this department of surgery, claims that in total transverse lesions of the spinal cord both the superficial and deep reflexes below the functional level of the injury are permanently and entirely abolished; while in partial lesions the reflexes are retained, perhaps exaggerated. He further claims that if the lesion causes complete paralysis and anesthesia the deep reflexes are always lost.[2]

One of the most important questions in this connection is the effect upon the spinal centers of isolating them from their cerebral connections. If there has been no error of observation in this case, I think it will bear me out with the statement that the functional activity of all the spinal centers below the lower level of the lesion were totally abolished with the exception of two: "the sexual reflex center" and "the tonic center of the sphincter vesicæ muscle." The proof that the *first* was not totally destroyed is demonstrated by the fact that the local irritation of passing the catheter increased the priapism to a very marked degree. The most plausible theory of priapism is that of Dr. Bramwell,[3] who claims that it is probably due to irritation of the "excitor" fibers, which pass from the cerebrum to the sexual reflex center. In other words, it is "a reflex act," produced by an irritation of these fibers at the point of the contusion of the cord. The fact that the local irritation of the catheter increased the condition tends to prove Dr. Bramwell's theory, in opposition to the old one of "vasomotor paralysis."

The proof that the *second* center was not paralyzed is very evident from the fact of the persistent retention of urine, without any dribbling whatsoever, notwithstanding the fact that the bladder was distended to such a degree that the pressure against the diaphragm from below quite seriously interfered with respiration. Dr. Lidell has observed that in these cases retention of urine is almost certain to exist for a time, to be succeeded by incontinence as soon as the sphincter muscle becomes paralyzed.[4] If the inhibitory fibers of the sphincter have been severed or destroyed, any voluntary inhibitory impulse sent from the brain will meet with resistance at the lesion. Consequently, if the sphincter is inhibited after there is total transverse lesion above the tonic center, it must be by "Gowers' reflex,"[5] that is, by sensory stimuli from the mucous membrane of the bladder itself. But in this case I think we have shown conclusively that both the motor and sensory power of the bladder-walls were paralyzed. Therefore, it seems to me evident, as the tonic center remains in force after the cord is completely crushed above it, that it is, at that time, *an independent spinal center, isolated from any cerebral connection.* Dr. Hughlings Jackson has observed that the highest centers of the nervous system, those that are the last to develop in the process of evolution, are the first to fail in dissolution and are the most readily affected by sudden irritation.[6] Reasoning from this data the natural inference is that "the sexual reflex center" and "the tonic center of the sphincter vesicæ muscle" are the most stable centers of the cord, as they are almost always the last to lose their functional activity after total transverse lesion of the cord.

So far as the prognosis is concerned in these cases there is very little to be hoped for. Dr. Thorburn states that it is hopeless to expect that the crushed cord can recover.[2]

Some suggest that the two segments might be innervated by transplantation of the spinal nerve roots, and thus restoring the function of the cord.[7] But this seems to be entirely too radical a measure, increasing the dangers to life, without offering any reasonable chance for improvement.

From the foregoing history, and from a rather

careful review of the sparse literature upon the subject, I make the following deductions:

1. In acute traumatic lesions of the spinal cord, when there is instantaneous and total paralysis of both sensation and voluntary motion, the probability is in favor of *crushing* of the cord rather than of *compression.*

2. When the cord is totally crushed, there being instantaneous and total loss of sensation and voluntary motion below the lesion, there is also total loss of the reflexes (the opinion of many good authorities to the contrary notwithstanding.)

3. When the cord is once completely crushed, as indicated by the foregoing symptoms, viz., instantaneous and total loss of sensation, of voluntary motion, and of the reflexes, reduction will not improve the symptoms, and surgical interference will very likely only shorten life, without offering any reasonable hope of improvement.

4. Priapism is probably due to a reflex act, rather than to a vasomotor paralysis, or to a combination of both, as demonstrated by the local irritation of a catheter.

5. Usually there is marked vasomotor paralysis, indicated by the flushed face, slow and feeble pulse, and profound depression of temperature, soon followed by hyperpyrexia.

6. Usually there is retention of urine, to be followed, sooner or later, by incontinence, unless the lesion is low enough to involve the tonic center of the sphincter, or unless the associated concussion has been sufficient to impair the function of this center. In either case there is paralysis of the sphincter and incontinence of urine from the first.

7. It is a characteristic peculiarity of acute traumatic lesions of the spinal cord that consciousness and the power of speech are very seldom lost, a very important contra-distinction to similar injuries of the cerebrum.

8. "The sexual reflex center" and "the tonic center for the sphincter vesicæ muscle" are very probably the most stable centers of the cord, as demonstrated by their persistence of action after complete isolation from their cerebral connections.

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ACUTE ALCOHOLIC INTOXICATION IN INFANTS, AND THE ABUSE OF ALCOHOL IN THE GASTRO-INTESTINAL DISORDERS OF INFANCY.

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The influence of alcohol and alcoholic drinks upon the organism of infants and children has been forcibly brought to the notice of the profession in an address of Professor Demme, of Berne. In this small brochure, which at first received much notice (1891) in the medical press, the influence of alcohol and its congeners was forcibly pointed out. It is surprising how little influence this work has had among physicians. The infant and child are peculiarly susceptible to alcohol, and its effects in both the acute and chronic phases have been well pictured by Demme. In the care of a very large infant and children's dispensary clientele I have noticed, during the summer months, and for the past few years called attention to the very large number of infants suffering from acute or subacute gastro-intestinal disease that are the victims of an unrestrained administration of solutions of whiskey or brandy. The parents of these infants are directed by their physicians or sanitary advisers to give the little patients minimal quantities of brandy or whiskey at stated or indefinite intervals. The mothers, in their helpless ignorance, overdose their children, adding the condition of alcoholic stupor to the weakness resulting from the effects of illness. It is an every-day experience in the heated term for me to be brought face to face with an infant very ill with cholera infantum, acute gastro-enteritis, or even simple diarrhea, which is nursing a warmed solution of a teaspoonful or more of brandy or whiskey, or gin, to half of a nursing bottle of tea or spiced water. Such infants are given these solutions for hours *continuously.* The mothers declare that it is the only thing the little patients will retain. This punch, for such it really is, stupefies the babe; it quiets the little sufferer, and lulls the mother into a false notion of improvement of the severe illness. At the outset, it must be remembered that these little patients bear alcohol as badly as they do opium. It may prove interesting to describe the condition of some of these infants as they come to me.

An infant or child that has had more alcohol than is wholesome for it will, in the primary stage of intoxication, act in a very peevish manner. From a good-natured infant, the mother tells you, it has degenerated into a crying sufferer; it throws its arms and head from side to side, refuses to be comforted, and will even strike itself or its parent. It will

try to leave the mother's arms, and then again will wish to return. In other words, the child or infant is over-restless, but not at all in the manner of children or infants that are simply sick. Looking at the features, we detect a dull, blank expression, very much like that seen in the intoxicated adult. Again, the eyes may be large and brilliant, or vacant and presenting a stare. Some infants sit up in the arms of the mother; they are weak and worn out by their illness, and during a respite from their symptoms they desire to play. If too much alcohol has been administered, however, there is a typical helplessness in the weak attempts at play. The brilliant and vacant eyes give the little ones an indefinitely quizzical expression.

In a more advanced stage of intoxication the infants present the signs of an unconquerable stupor. In spite of pains or movements they are actually soporose. They no longer notice their surroundings. At intervals, when the pains of colic are great, the infant may cry out.

That the use of alcohol among all classes is quite common in diarrheal disturbances there can be little doubt. The highest authorities seem to sanction this use. It is not surprising, therefore, that the abuse of a good remedy has become so flagrant that we must question whether the harm produced in allowing the use of alcoholics by the laity in a general way does not far outweigh any temporary benefits. If the doctor himself, or nurse, or among the poor the district nurse, could personally administer the remedy, some good might accrue; but even here I think the good in gastro-intestinal disorders can only be temporary.

Let us view this question from another standpoint. The infant, or even adolescent organism, is very susceptible to the effects of alcoholic drinks. Demme says that in his experience a dram of whiskey produced acute intoxication in a boy of fifteen years. I have now on my list of private patients a little friend of twelve years in whom a full hysterical attack, with its varied modifications, can be developed by a very small glass of sherry wine. Demme says that cognac, as used by the poor, contains 55 per cent. of alcohol; whiskey from 45 to 50 per cent.; wines from 8 to 10 per cent.; malaga or port, so much in use among children, 28 per cent. of alcohol. Bartholow says that the average sherry contains thirty-nine parts by weight of alcohol. According to Lehmann, the German wines only contain as high as 12 per cent. of alcohol. These figures are given in answer to the invariable and careless question put to us as to how much alcohol, if any, is contained in the so-called "*few drops*"? of brandy or whiskey. My studies in infant-feeding have convinced me that alcoholics, as they are administered to infants to-day, are a source of great harm in the treatment of disturbances of the stomach and intestinal functions. Small quantities, and these cannot be exactly gauged, may stimlate the functions of the stomach at first. Nausea and vomiting seem to be checked at the outset by small quantities of ice and brandy. This effect, which, in my experience, is always transient in infants, is succeeded by vomiting, which is uncontrollable and more serious than that which had ushered in the illness, to be followed by symptoms of intoxication. Mothers constantly corroborate these views of mine. Demme, quoting from Kretschy, says that small doses of dilute alcohol stimulate the production of the stomach-juices. Larger doses, or doses taken during the period of digestion, disturb and retard the stomach-digestion, or even temporarily suspend it. The same writer says that the customary addition of from one-half to one teaspoonful of cognac to the milk of children, when given for a time, as is customary among the laity, disturbs the processes of digestion. It causes chronic irritation of the stomach and dyspepsia.

During the past few years I actually have avoided, or, if necessary, forbidden, the use of all alcoholics in the treatment of the acute gastro-intestinal disorders of infancy. This rule, universal as it has been in my practice, has convinced me, through the very satisfactory results obtained, that there can be no excuse for the use of alcohol in these cases.

It is only recently that I horrified the family of a physician whose infant was mortally ill with acute gastro-enteritis. The little infant, seven months old, was as sick as it was possible for such an infant to be. It was bottle-fed, and in midsummer had been attacked by acute gastro-enteritis. It had lost five pounds in one week, and, when I saw it, was living principally upon whiskey. It was stupid with whiskey, soporose, throwing its head from side to side when distressed, the features blank, without expression to the eyes, and moreover with constant vomiting of the food. In conjunction with other modes of treatment the whiskey was immediately stopped, much against the family's wishes. The little patient recovered without another drop of alcohol, in spite of the attendant's misgivings. This case is mentioned as one in which I am certain that my ideas were followed out; also as an instance of one of the sickest infants I have ever seen recover.

I have washed out the stomachs of infants, and the fluid thus evacuated smelled strongly of brandy administered by the mother to excess. The physician had ordered it. As already asserted, I never use brandy or whiskey in any form in the acute stages of gastro-intestinal disease. It is not physiologically correct to do so. If the gastric functions are disordered, if the acidity is reduced, and as in severe cases even the enzyme is not produced in its normal quan-

tity, alcohol administered as described only makes the diseased state worse. Epstein in his almost classic paper on the nature and treatment of cholera infantum (Henoch's *Festschrift*, 1891) calls attention to the harmful use of alcoholic solutions or wine at the outset of the disease, the marked tendency of these cases to alcoholic intoxication, and the similarity of some signs of this intoxication to those of true cholera infantum. He also has found wine in large quantities in the atonic stomachs of such infants in whom there is gastric atony to a marked degree.

The two arguments in favor of alcohol that have been used at times when the stomach-digestion of infants was less understood than it is to-day are: First, that the stomach-juices should be stimulated; and, second, that we should try to foster the strength and support the heart of the little patient.

To-day the most approved method of treating an infantile stomach suffering from transient or acute disturbance is not to stimulate its functions, but to give the organ complete rest. Food is absolutely interdicted, especially such food, like milk, as is bulky and leaves a residue. The stomach is washed out (Epstein). The infant is placed upon solutions of egg-albumin for at least twenty-four hours. The best results are thus obtained by waiting for a restoration of the gastric functions. After twenty-four hours, if we find the stomach tolerant, and active symptoms have subsided, we still abstain from foods that leave residues, and give beef-juices, and gradually return to a milk-diet after all danger of gastric irritability has passed. If there is a condition of reduced acidity of the stomach we must supply the want in the shape of minute doses of dilute hydrochloric acid. If the failing strength of the patient should demand it in cholera infantum we can replace alcohol with much greater safety to the patient by the use of spartein, from $\frac{1}{64}$ to $\frac{1}{32}$ grain, every few hours, or $\frac{1}{500}$ grain of strychnin if collapse threatens to set in. Minimal doses of strophanthus and digitalis ($\frac{1}{2}$ minim of the combined tinctures every three hours) will act very satisfactorily and for a longer period of time. Camphor is very disagreeable, and therefore should not be given; the same applies to musk.

My argument thus warns against the use of alcohol as rather aggravating the conditions it is intended to relieve.

It has not been the object of this short paper to exhaust the subject of alcoholism in infants and children. I also believe with Demme that it would be deplorable should the abuse of alcohol carry with a suspension of its use at the bedside of the infant. With Demme, Binz, and Jaksch, we must all recognize the great utility of alcohol as a cardiac stimulant in diphtheria, scarlet fever, measles, erysipelas, and typhus fever. But it is here my primary object to call attention to the abuse of alcoholic drinks in the acute gastro-intestinal disorders of infancy, and also to show how the very large number of cases coming yearly under my care have been successfully and conscientiously treated absolutely without the aid of alcohol in any form.

THE VALUE OF STETHOSCOPIC PERCUSSION IN MEDICAL DIAGNOSIS.[1]

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That it is through the means of physical exploration that medical diagnosis most nearly approaches an exact science is a doctrine that should be fruit ful in good results. When a method of physical examination for which masters in medicine have claimed unusual advantages has not come into general use, there must be some strong and practical reason for it; and it will be the object of this paper to point out that reason, and to urge the value in physical diagnosis of the application of stethoscopic, or as it is more commonly termed auscultatory, percussion.

In 1840 Drs. G. P. Camman and Alonzo Clark published in the *New York Journal of Medicine and Surgery* an article entitled "A New Mode of Ascertaining the Dimensions, Form, and Condition of Internal Organs by Percussion." These authors recommended in carrying out their method a special form of stethoscope made of a single piece of wood, some six inches long and an inch in diameter, wedge-shaped at the extremity to be applied to the body, and broad at the other to fit the ear of the observer. Percussion was carried out by the use of a pleximeter, which was presumably manipulated by an assistant. No work that has been done on this subject bears the evidence of such exact and thoughtful observation as that of Camman and Clark, and their own words form an admirable description of the application and results of the method. They say:

"The observer, suppose, practises first over the heart, listening and percussing on the same region. With each blow of percussion the ear receives a sudden, clear, intense sound of high tone, attended with a degree of impulse even painful, appearing to be immediately under the instrument or produced within it, of short duration, and ending with some degree of abruptness. Now find the longest diameter of the heart in contact with the walls of the chest; it may be three inches; listen at one extremity and percuss at the other. The sound is the same in

[1] Read before the Pan-American Medical Congress, Washington, September, 1893.

character and has lost little of its energy. Percuss at the point where the lung begins to overlay the heart, the sound is instantly modified and mixed, yet its cardiac type is still preserved. Recede still further with percussion, moving by short steps toward the body of the lungs; at a certain point the sound suddenly changes. It loses its intensity and high tone; it is no longer impulsive; it is grave and distant, much more distinctly heard by the open ear than by that applied to the instrument. Again, let the observer in like manner explore the hepatic region. Within short distances the sound is sudden, clear, intense, and immediately under the instrument as before; yet it is less intense, less acute and more prolonged; it is even semi-reverberant. As he increases the distance between the points of auscultation and percussion, the sound diminishes more rapidly than over the heart, though it is not entirely lost till percussion passes off from the organ on to another medium. By this mode of exploration, the heart and liver become distinguishable through a class of signs which, judging even from the analogous consistency of these organs, would not be supposed to exist."

In 1880 T. A. McBride described (in the *New York Archives of Medicine*) a form of binaural stethoscope, composed of solid wooden pieces, by which auscultatory percussion could be conveniently carried out by a single observer. These authors restricted themselves chiefly to the determination of the outlines of the heart and liver. Various other observers, including Roussel,[1] de Mussy, Zuelzer,[2] and, according to Weil, even Laennec and Piorry, have called attention to the facility with which organs and morbid growths could be differentiated by the stethoscope applied to one side of the chest while percussion is carried out by an assistant on the opposite side. It is extraordinary, as is remarked by McBride, that, in the recognized treatises on physical diagnosis, the method of auscultatory percussion has received but little attention and no indorsement. Gerhardt[3] appears to make no reference to it. Weil[4] speaks slightingly of the method and declares that, as a rule, it offers no special advantages. Loomis[5] and Page[6] mention the procedure on the authority of Camman and Clark; Gemmel[7] incompletely describes it; but all these writers refer to the subject as if at second hand, as if they had failed to give it personal investigation. It is, therefore, not surprising that the active members of the medical profession are, for the most part, either wholly unfamiliar with the practical application of auscultatory percussion, or, in isolated instances, only use the method when some accident of experience has illustrated its value.

The reasons why physical examination by the method of stethoscopic or auscultatory percussion has not come into general use are not far to seek. In the first place, the mechanical impediments to the pursuit of the practice have been made burdensome; special forms of stethoscopes, useful only in this particular kind of examination have been recommended, and, usually, the services of a skilled assistant are required, to carry out the observations. In the second place, most descriptions of the findings of stethoscopic percussion enter so fully into the pitch and quality-differences of sound elicited by percussion of various organs as would manifestly need for their appreciation such a musical cultivation and training in the physics of acoustics as might well discourage the student in medicine from attacking so cumbersome a method.

I have never employed the special instruments described by Camman and Clark and McBride, though it seems probable that the results so obtained must be particularly striking and accurate. But it is the particular design of this essay to show that auscultatory percussion may be advantageously and readily carried out by any single observer who uses a stethoscope; that it is the easiest of all methods of physical examination; that it allows the accurate outlining of organs and deposits impossible of delimitation by ordinary means, and that, though capable of extensive development as a means of diagnosis under the acoustic skill of the observer, its limitations are so well marked as to instruct, without confusing, any ear that can hear.

My own work has been done with the simplest form of binaural stethoscope. The diameter of the bell to be applied to the body is five-eighths of an inch at its mouth, so that it can usually be inserted between the ribs of a patient. It should be remarked, however, contrary to McBride's statement, that, by this method, it makes little apparent difference whether the mouthpiece of the stethoscope overlaps the ribs or lies wholly between them.

I was first impressed with the value of auscultatory percussion on attempting to outline the stomach in the case of an old man the victim, apparently, of chronic peritonitis, whose intestines were inflated with gas. It was not possible by ordinary percussion to determine the lower border of the stomach. The stethoscope was applied over the upper left border of the epigastrium, and with the pulp of the middle finger of the right hand the abdominal wall was gently tapped, so gently that no sound was audible to the unaided ear, the finger being carried in a straight line from the stethoscope outward. With each blow of the percussing finger a peculiar shock, with a certain loudness and quality of sound, was

[1] Quoted by McBride.
[2] Berlin. klin. Wochenschr., 1877.
[3] Lehrb. d. Auscult. u. Percussion.
[4] Topograph. Percuss. [5] Physical Diagnosis.
[6] Physical Diagnosis.
[7] Finlayson's Clinical Diagnosis.

conveyed to the ear, gradually decreasing in intensity as the percussing finger receded from the stethoscope until a certain point was reached; then the loudness of the tone and the intensity of the shock suddenly diminished; at the same time the quality changed, but it is desired to especially observe that quality-differences in sound are to be left to the unconscious appreciation of the examiner and are not to be depended on in this description. Having marked the spot at which this change in sound occurred, the percussing finger was carried from the stethoscope as a center along other radii, and it was found that the line joining all the points so determined represented the shape of the greater curvature of the stomach. Whenever the outline of an organ was determined in this manner the result was verified by placing the stethoscope outside its limits and percussing up to it. It frequently occurs that the boundary between two adjacent organs can be more readily determined when auscultation and percussion are performed on one than on the other.

In outlining an extensive body, as the stomach or the liver, it is frequently of advantage to shift the position of the stethoscope along the line of percussion. I have paid more attention to the determination of the outlines of the stomach than of any other organ, because the difficulties to be overcome are in this case, perhaps, on the whole the greatest. In six different autopsies the stomach was outlined in the manner described, the boundaries being marked by inserting pins into the abdominal wall perpendicular to the surface, and their position among the viscera afterward determined by section. In one of these cases the stomach was dilated, reached far into the right hypochondrium, was wholly covered by an enlarged liver, and the abdominal cavity contained free gas. In another the stomach was contracted into the form of a tube having a diameter of less than two inches. Nevertheless the greater curvature of the organ was outlined in each case with almost perfect accuracy. The greatest error occurred in a case in which the border of the stomach lay just under the free margin of the ribs; one pin was found to have been inserted into the stomach three-fourths of an inch from its edge, and another half an inch below it. It is worthy of remark that, although the stomach and colon are thus usually distinguishable, the stomach and duodenum do not appear to be, and my pins sometimes traced the course of the gut for a distance beyond the pylorus. Leichtenstern, quoted by Weil, used a somewhat similar mode of stethoscopic percussion to differentiate stomach from colon, depending, however, on the pitch and quality of the notes elicited from the two organs. But it is worthy of being insisted on that, though the pitch and quality of the percussion note vary with the organ struck, and at least unconsciously are appreciated by the examiner, the most important factors to be noticed when the percussing finger passes from one organ to another are the changes in loudness and shock of the note.

In those not infrequent instances in which the stomach gives to ordinary percussion a dull sound, stethoscopic percussion is at no loss to distinguish the true boundaries. In a recent clinical case in which this stomach-dulness made it impossible to outline in the ordinary way the contiguous borders of liver, spleen, and lung, the difficulty disappeared at once upon use of the stethoscope.

In another patient in whom the determination of the superficial area of the liver was of great importance, the liver-dulness as made out by ordinary percussion extended only over one costal interspace; stethoscopic percussion, however, showed that the liver reached the margin of the ribs, giving the organ a normal volume. The next day, after free purgation, the normal limits of liver-dulness were determinable by ordinary percussion.

Probably few examiners are capable of outlining with certainty the border between the liver and a superincumbent pleural effusion; by stethoscopic percussion, however, the separation is easily determined. In an autopsy in a case of pyopneumothorax it was found possible to define within one-fourth inch the boundaries of both relative and absolute liver-dulness, as verified by aspiration of the fluid and by section. To fix the line of division between air and fluid involved, of course, no difficulty.

The method offers valuable assistance in determining the level of effusions, pleuritic or abdominal. In the latter case spleen, liver, and kidneys can easily be distinguished. The splenic borders are readily determined when obscured to ordinary percussion by contact with a distended stomach.

The cranial sutures can usually be made out by stethoscopic percussion of a bald head or shaven scalp. I have watched in vain for an opportunity to outline, if possible, a superficial brain-tumor.

The most interesting application I have found for this method was in a case of pneumonia in which an encysted empyema developed outside the lower lobe of the left lung. The pus touched the chest-wall in contact with and parallel to the sixth and seventh ribs throughout their anterior and lateral portions. Neither by ordinary percussion nor by auscultation could the empyema with certainty be distinguished from the adjacent solid lung-tissue; but by stethoscopic percussion the cyst was outlined, and my colleague at the County Hospital, Dr. John Boice, resected a rib near the lowest point of the area so determined, and declared that no better place of

incision could have been chosen. Had the chest been opened in the ordinary region the cyst would have been missed altogether. In another case, one of a large empyema, encysted over the liver, stethoscopic percussion assisted the surgeon by exactly locating the top of the latter organ.

The delicacy of this method is nowhere better illustrated than in examination of the normal lungs. When the stethoscope is placed over one lobe and the percussing finger is made to travel across to another, there is a distinct change in the sound as the interlobular fissure is passed. Though but little attention has been paid to this part of the subject, I have on two occasions at autopsies inserted long needles with considerable accuracy into the line of the interlobular fissures as determined by auscultation percussion.

The limits of usefulness of the method of stethoscopic percussion as thus described are obvious. While a trained ear by the aid of special instruments, such as those devised by Camman and Clark and McBride could, no doubt, determine the physical condition of the organs investigated, as to their fluid, solid or gaseous contents the present paper does not treat of this possibility. The sudden diminution in the shock and intensity of an auscultation-percussion note as the body-surface is tapped by the finger moved along radii centering in the stethoscope simply means that the percussion has reached an organ, growth, or effusion outside that over which the stethoscope is placed. This result is altogether to be expected, as vibrations set up in any homogeneous body must suffer great diminution in energy whenever transmitted to an adjoining body of whatever consistence. Stethoscopic percussion must be used in conjunction with ordinary percussion and with consideration of topographic anatomy. For example, the position of the border of the left lung upon the heart can usually be accurately determined; but whether or not this line marks the lower or upper margin of the heart, the sound elicited does not make clear.

In fact, twice at autopsies needles were inserted into the margin of the lungs covering the heart, with the thought that the lower border of the latter organ had been outlined; further experience corrected such mistakes.

An advantage possessed by the method of stethoscopic percussion deserving of special mention is the feeling of certainty with which its results usually impress the examiner. In post-mortem observations I have been interested to note that when stethoscopic percussion had given distinct evidence of the outlines of organs, no mistake was ever made. On the other hand, whenever an error was committed, the examination itself had been dubious in its indications.

CLINICAL MEMORANDA.

THE OCULAR SEQUELÆ OF EXPOSURE TO THE SUN; WITH A REPORT OF TWO CASES.

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COMPARATIVELY few cases of disease of the eye have been published which have been traced to insolation as the cause. I would, therefore, assume that they are infrequent. Among sixteen thousand patients presenting at the eye clinic of the Jefferson Hospital none attributed the cause of their complaint to exposure to the sun (Hansell and Bell, *Arch. Ophth.*, Jan. 1892). Both on account of the rarity of such cases and also that a novel procedure was attempted in Case II, with moderately satisfactory results, the two cases recorded herewith are of interest.

CASE I.—H. P., eight years old, was brought to me in October, 1891. His mother stated that toward the close of the previous month, after a week of intensely hot weather, her son had been very ill with symptoms of brain-fever, and had been treated by a physician. During two days, while the fever was at its height, the boy had been comatose and delirious. The parents lived on a farm in New Jersey, and the child had been exposed the greater part of each day to the direct rays of the sun. He had had no acute attack of sun-stroke, and, until the eye-examination had been made, attention was not directed to the sun as a cause of the illness. After recovering from the acute attack he complained, mainly, of double vision. The tests showed marked internal squint from paralysis of the right external rectus. The eyeball could not be rotated outward beyond the median line, and everywhere in the common field, including the extreme left, diplopia was found. Directly in front of the patient, 6 m. distant, the images of a candle-flame were fused by a prism of 20° base out. V. in R. = 6/30; L. = 6/40. The optic discs were more pallid than normal and surrounded by a narrow ring of atrophied choroid. The arteries were normal in caliber; the veins dilated. The fields for white and colors were not taken. The diagnosis made was: Pressure upon the right abducens by exudation from a meningitis of the base, originally caused by exposure to extreme heat, and involvement of the sheaths of the optic nerves by extension of the inflammatory process. The treatment was potassium iodid, potassium bromid, each 7½ grains t. d.

In December, three months after the treatment was inaugurated, the following condition was noted. There was binocular fixation and V. = 6/6 in each eye. Muscular equilibrium was restored; the circulation in the retinæ and discs was normal, and no pathologic appearances existed, excepting the rings of disturbed choroidal pigment.

CASE II. (Exhibited before the Section of Ophthalmology of the College of Physicians.)—Lizzie McK., thirty years of age, a child's nurse, during the excessive heat of July, 1892, suffered severely from headache, but was not confined to bed. In the following October, her vision having perceptibly failed, especially in the right eye, she consulted an ophthalmic surgeon,

who prescribed R. and L. + 1.50 D., without having made a careful examination of the eye-ground. Vision continued to fail, until, in February, 1893, she was obliged to relinquish her position, and then consulted me. I found the right eye divergent and V. = 5/200, the media clear. There was an enormous swelling of the disc, greater in the lower quadrant, where it appeared as a tumor overhanging the retina. The retina, excepting in the immediate neighborhood of the disc, where the swelling from edema and exudation was considerable, was free from hemorrhages or inflammatory changes. The field of vision extended less than 10° from the point of fixation. The percipient portion of the retina was confined to that area lying close to the fovea; or stated, perhaps, with greater accuracy, the optic fibers supplying the foveal region were the only ones susceptible of conveying retinal impressions. Colors were recognized only at the point of fixation. The pupil was dilated and sluggish in its response to light and convergence. In the left eye there were the same ophthalmoscopic appearances, excepting that the swelling of the disc was less intense than in the right, and there was no greater bulging below. V. = 6/50, and the field for white and colors was concentrically limited to about one-half its normal size. The pupils were normal in size and reaction. There was no muscular paralysis in either eye. The divergence of the right was due to the very small field and dull central vision.

During the several months that the patient was under observation the divergence was variable and at times disappeared. The patient was subjected to mercurial salivation by inunction, carried to an unintentional and dangerous degree by the patient's disobedience of the directions given for the use of the ointment. The gums, tongue, and entire buccal mucous membrane were enormously swollen and covered with a layer of necrotic epithelium; every tooth was loose; saliva was constantly exuding from between the protruding lips and the breath was extremely fetid. No solid food could be eaten for two weeks. By diligent treatment with permanganate of potash sprayed into the mouth no permanent injury and no loss of the teeth occurred. After recovery she was put upon increasing doses of potassium iodid until 100 grs. daily were taken. Vision in the right eye increased to 20/70 and then fell to 5/200. The field remained unchanged. Vision in the left improved to 6/6, with enlargement of the field. After two months of the iodid treatment, strychnin sulf., gr. $\frac{1}{30}$ t. d., was substituted.

In May, no improvement resulting in the acuity of vision or in the enlargement of the field of the right from strychnin, and believing the vision to be hopelessly involved, I determined to stretch the optic nerve. The internal rectus and the conjunctiva having been freely separated from the sclera, under cocain, and held to the median side by my friend Dr. A. Hewson, who kindly assisted in the operation, a strabismus hook was passed backward with its point hugging the sclera until it reached the neighborhood of the nerve. By careful manipulation the nerve was caught in the bend of the hook and prudently, but with moderate force, drawn forward a number of times. The procedure, which I believe has never before been performed, at least under the same conditions, is a simple one. The only difficulty lies in the fact that one cannot see that the nerve is the part included in the hook. One can, however, be reasonably certain that one has secured the nerve, when by sudden traction the cornea is rotated several mm. outward, and the patient complains of seeing flashes of light and balls of colored fire. The operation is attended with considerable pain even under a liberal allowance of cocain. After the attempts at stretching are concluded the severed internal tendon is united by suture to the sclera in its former position or in advance of it. The operation is conducted under antiseptic precautions. During the six months that the patient has been under my care, the swelling of both nerves has materialy lessened, more markedly in the left, but the overhanging section in the right can still be distinctly seen. The arteries are diminished in caliber, the veins dilated and tortuous. The optic-nerve boundaries can be determined in the left, but not in the right. The latter is still covered with exudation, which has become nearly white; the former is distinctly outlined and pale. Vision in the right is 6/60, and the field is unchanged. In the left, vision = 6/6, the field is enlarged, but still concentrically contracted. The functional divergence of the right eye remains unchanged.

The only articles bearing directly on the subject that I have been able to find in accessible literature are by Alleman (*N. Y. Med. Journ.*, May 5, 1888), and by Spalding (*N. Y. Med. Record*, April 28, 1888). In them are reported the cases published up to that time. Alleman adds one case of his own. A blacksmith, while working on the second day of very hot weather, became dizzy and bewildered. He quit work at noon and walked with difficulty to his home, falling repeatedly. The following day the left side of his body was numb, and vision to the left was blurred. Three weeks later, when he presented himself at the Germantown Hospital, the right eye was normal. In the left there was a dilated and sluggish pupil and marked papillitis. There is no further report.

The changes in the optic-nerve end have been explained by Michel on the assumption that a thickened or otherwise altered condition of blood in the cerebral vessels has produced a high degree of stasis, followed by edema; by Hotz, on the theory that the papillitis is secondary to a meningitis of the base. Gowers says that insolation is an occasional cause of meningitis and influences chiefly the convexity. "In cases of death, only indications of congestion may be discoverable." Alleman thinks that the eye-symptoms are caused by a vasomotor disturbance of the local supply of blood, and refers the general symptoms—giddiness, headache, numbness, etc.—to the same cause. Hughlings Jackson claims that the group of symptoms is identical with that produced by a tumor of the cerebrum, "not as a pathological product, but by its general character of a foreign body."

In the two new cases described in this paper the ocular sequelæ must be referred to a local meningitis of the base, which was characterized by well-marked symptoms: intense headache, fever, delirium, papillitis, and transient or curable paralysis of the sixth nerve. So prominent were the discs in Case II that they suggested tumor as their probable cause. In the sense

that meningitis, attended with extensive exudation of solid matter and an increase in the contents of the ventricles, thus augments the intra-cranial pressure, it may be considered, clinically, as a tumor, and may be expected to bring about destructive changes in the origin, course, and termination of the cranial nerves. My own explanation of the paralysis in Case I is that the sixth nerve of the right side was implicated by direct pressure from exudation, and that the optic-nerve sheaths were becoming involved when the inflammation was interrupted by treatment; and of the choked discs in Case II, that the meningitis advanced as far forward at least as the optic foramina (perhaps to the scleral openings) and there produced strangulation. It was on this theory that I attempted to improve vision by operation—to separate, if possible, the adhesions between the sheath and the bony confines of the canal. That no marked improvement ensued should not militate against the justifiability and feasibility of the procedure. Had it been performed earlier, before atrophic changes had commenced in the fibers of the optic nerves, better results might have been obtained. If the fibers which convey impressions from the foveal region are surrounded in the nerve by the peripheral fibers and occupy its axis, it is reasonable to presume that the first to be destroyed from external pressure or inflammation of the sheath must be the fibers in juxtaposition to the sheath, and that the periphery of the field would be lost first. To suppose that choked discs, even of high grade, must invariably arise from the increased pressure of abnormally increased intra-cranial contents would frequently lead to error in diagnosis. Instances of large tumors without choked discs are common. Choked discs without tumors are equally common. Tumor cannot be differentiated from meningitis by the number of diopters of swelling of the disc, as is claimed. There is no constant relation between increased intra-cranial contents and the choked discs due to their presence. When, however, the tumor gives rise to a meningitis, and the inflammatory action extends to the neighborhood of the superficial origin of the ocular nerves at the base, an interference with their function may be expected. Indeed, localization can hardly be attempted without such evidence, whether it be a positive or negative. No efforts to localize a new-growth could be successful if paralyses of the cerebral nerves could be explained by attributing them to a cause so indefinite and general as increased intra-cranial pressure.

AN ULCUS ELEVATUM OF THE FACE.[1]

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ON October 10, 1892, A. D., a waiter, aged twenty-eight, born in Italy, presented himself at the clinic of the University of California, complaining of a tumor below the left corner of the mouth. He said that two months before he had fallen on the sidewalk in a district of San Francisco known as "the Barbary Coast," and wounded himself. A pimple shortly afterward appeared at the seat of injury, which itched slightly, causing him to scratch it.[1] It then began to enlarge, and when seen on the date mentioned, it was a large, prominent, fleshy, circumscribed, convexly-rounded growth. There was a slight crust and some pus on its faintly granular surface, but most of the exudation was serous, and when well wiped and left exposed to the air it quickly became glazed from the drying serum. There was a shallow depression a little below and to the right of its center,

which, however, did not sensibly interfere with the hemispherical outline.[2] It was perfectly yielding and fleshy to the touch, without the least trace of chancrous hardness. There was no pain or itching. The skin formed a slightly raised rolled edge around the base of the tumor. On first looking at it, it did not make the impression of a chancre, but I instantly thought either of sarcoma, the surface of which might have been excoriated by irritant applications, or of that form of ringworm which causes large fleshy nodules on the bearded face, and which is called tinea kerion.

Although denying any other skin-lesion he was asked to strip, and there was found a dark-red papulo-squamous rash on the front of his chest, and a well-marked macular eruption on the abdomen. He had not known of either of these eruptions, as they had given him no trouble whatever. The macular syphilide, being especially characteristic, gave the key to the diagnosis.[3] Some scales from the rash on the chest and some hairs which were implicated in the tumor-formation on the

[1] Synonyms: Elevated papule or tubercle (Taylor); Chancre induré proéminent ou bombé (Mauriac).

[1] This case shows well the difficulty of trying to trace the source and the manner of the infection in extra-genital chancres, a difficulty which has been noted again and again in medical literature—for instance, by Siegfried Baum ("Casuistische Beitraege zur Kenntniss der extragenitalen Initialsclerose," Vierteljahresschrift f. Dermatologie u. Syphilis, 1885, p. 112). The patient in the present instance denied, and to all appearances in good faith, any knowledge of how he should have acquired his lesion.

[2] This shallow depression indicated central tissue-degeneration, which may go on to deep ulceration, altering very decidedly the appearance of the lesion.

[3] It was diagnosticated from tinea versicolor, which is sometimes mistaken for it.

face were examined microscopically, but neither the spores nor the mycelium of tinea was found in them. Furthermore those hairs of the beard which happened to be situated in the tumor were firmly set, and had no suppurative points or abscesses around them. There was also only one tumefaction instead of a number, as in tinea kerion.

There was one lymphatic ganglion indolently enlarged under the body of the lower jaw on the left side, and the posterior cervicals were also painlessly swollen, but none of the other subcutaneous lymphatics were demonstrable. There was at first no falling out of hair, no sore throat, no involvement of eyes or mouth, and no afternoon fever.

The resemblance of this dark-red, fleshy, rapidly-growing, prominent tumor of the face to sarcoma was very great, but the presence of the macular rash, and the fact that chancres, when occurring on the skin of other parts of the body—for instance, on the privates—do, although rarely, take on this peculiar form, allowed a correct diagnosis.

The patient was given the pills of the protiodid of mercury internally, and locally mercurial ointment was ordered. This course did not seem to have any marked effect on the chancre, and the local treatment was afterward changed to painting with the acid nitrate of mercury from time to time, and a salve composed of equal parts of oxid of zinc and white precipitate ointments. It now began quickly to subside, and the rash faded away. About twenty days after I first saw him his hair began to thin out in patches over his temples, but the alopecia was never very pronounced.

Taylor says the ulcus elevatum evolves out of the simple chancre erosion by an exuberance of cellular infiltration;[1] but it would seem from the patient's assertions that in this case it developed from a papule, and there does not appear to be any good scientific reason why it might not do so. Of course, we have only the patient's untrained observation, which stands a fairly good chance of being incorrect, as very few people would be likely to make the distinction between an erosion and a papule.

It would appear from a remarkable case of facial chancre, reported by Mr. Harrison Cripps,[2] that the surface of the ulcus elevatum, instead of being smooth, or granular, or only moderately papillary, may be markedly warty and dry, looking like a papillary epithelioma.[3]

The utter absence of hardness is a noteworthy fact, for the induration of primary sores of the head is particularly constant, marked, and characteristic. In fact, it was at one time held that all chancres of this region—"chancres céphaliques," as Ricord used to call them—were necessarily indurated; but this view has been modified by the clinical observation that some sores even about the head, which were followed by undoubted syphilis, never throughout their whole course exhibited the least trace of hardness.[1] Another point about this chancre was the slowness with which it yielded to treatment at first, which might have caused one to waver in opinion as regards its nature. But this seems to be an especial characteristic of the ulcus elevatum;[2] it may even not retrogress at all, but may go on to form a prominent warty mass, which must be removed by operative procedure of some kind.

When this patient was last seen, toward the end of November, the chancre was on a level with the surrounding surface, and rapidly disappearing.

[1] "Genital Chancres in Women," by R. W. Taylor, M.D.: New York Medical Journal, January 2, 1892, p. 3.

[2] The Medical Society of London: Lancet, April 16, 1892.

[3] In Mr. Cripps' case the man noticed the growth between the lower lip and the chin two or three weeks after being cut by a barber. A fortnight later a rash appeared on his body, with sore-throat. The patient had a typical secondary squamous rash on the body when shown to the Medical Society of London ten weeks after being at the barber's.

A CASE OF POLIOMYELITIS IN A MAN AGED FORTY-FIVE YEARS.[3]

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Poliomyelitis is one of the commoner nervous affections of childhood, but is rarely seen in adults. Of 114 cases recorded by L. C. Gray,[4] the oldest was eighteen years. Some writers barely mention the fact that the disease may occur in adult life, while others state that the affection is one of childhood exclusively. Gowers[5] says: "The disease occurs at all ages, but is ten times as frequent in the first decade as in all the rest of life." Of 116 cases noted by him the oldest was in the ninth year.

In view of the extreme rarity of the disease, I have thought that the presentation of this patient, an elderly man, who is a sufferer from the affection, would not be without interest.

The patient, J. G., aged forty-five years, married, a plasterer by trade, has no specific history. He was a very hard drinker until two years ago, when he stopped drinking altogether. He has always enjoyed good health, and his family history is unimportant.

On December 31, 1892, while working at his trade, he noticed a swelling in his right hand. A certain loss of power in the hand quickly ensued. By the next morning the swelling of the hand had increased to a marked degree, and a distinct loss of power in the hand was very apparent to him. There was no heat, redness or pain about this swelling, which extended only to the wrist and involved chiefly the dorsal surface of the hand. It subsided in a few days. The loss of motor power noted as existing in the hand on the morning of January 1 (less than twenty-four hours after the swelling of the hand began) continued without any increase or diminution appreciable to the patient up to the middle of July, at which date I first saw him.

About two months after the onset of these symptoms

[1] Path. und Therap. d. Syphilis, von Moriz Kaposi, pages 51 and 61.

[2] "Genital Chancres in Women," by R. W. Taylor, M.D.: The New York Medical Journal, January 2, 1892, p. 3.

[3] Paper read at the August (1893) meeting of the Allegheny County Medical Society, with presentation of patient.

[4] Nervous and Mental Diseases, p. 214.

[5] Diseases of the Nervous System, vol. i, p. 352.

the patient noticed that the right forearm had become somewhat smaller than the left. This wasting increased slowly from the time he first noticed it.

When I first examined the man I found the following conditions: He was five feet nine inches tall, and weighed 165 pounds. The right forearm was much smaller than the left, from atrophy of the supinator and extensor muscles. The hand was deflected to the ulnar side, presenting the appearance of the "ape-hand" of certain writers. This appearance is evidently produced by the unopposed action of the muscles of the ulnar side of the forearm. There was some flatness of the back of the hand. The scapular portion of the deltoid was markedly wasted, while the clavicular portion was apparently unaffected. There was no appreciable atrophy of any of the muscles of the upper arm or shoulder other than this deltoid atrophy. In flexing the hand the little finger had nearly its normal power; the thumb was more affected than the little finger, but retained perhaps one-half or two-thirds its normal strength, while the loss of power in the index, middle, and ring fingers, particularly the two latter, was nearly complete. The man exhibited much more force in pronating than in supinating the arm.

All the extensors were very weak. The affected muscles failed to respond to either the galvanic or the Faradic current. No anesthesia or other sensory symptoms existed.

There was no loss of power or wasting of the muscles of the left arm or of those of any other part of the body. The dynamometer registered: right hand, 21; left, 84.

The painless atrophy, with the characteristic "ape-hand" made me think the affection might possibly be progressive muscular atrophy. But the sudden onset of the disease would preclude that affection. Besides this, the fact that nine months from the onset there is no atrophy of the muscles of the other arm or hand would tend to throw out this diagnosis. Progressive muscular atrophy always comes on slowly, and the paralysis keeps pace with and is proportionate to the atrophy, *i. e.*, the paralysis depends on the atrophy, not the atrophy on the paralysis—as in the patient before us.

The case might be taken for one of neuritis, involving either a single nerve or several or many nerves (multiple neuritis). It could not be one of inflammation of a single nerve, for the deltoid, supinators and flexors are not supplied by one nerve. In multiple neuritis both arms are nearly always affected, and there is always some pain. The deltoid atrophy could not depend on a neuritis, because the posterior half of the muscle is markedly atrophied, while the anterior half is apparently intact, and one nerve (the circumflex) supplies this entire muscle. If muscular atrophy resulted from inflammation of this nerve the atrophy would certainly involve the entire deltoid muscle and not one-half of it.

Although the man is forty-five years of age, and objects to having his disease called infantile, yet I think we must conclude that he suffers from infantile spinal paralysis—myelitis of the anterior horns. Certainly the onset and course of his disease corresponds accurately with the clinical picture of that affection. It came very suddenly, was painless, was characterized by palsy of certain groups of muscles, which subsequently became atrophied. The affection is monoplegic. There may have been slight fever (from 99° to 101°) at the beginning of the disease, but of this we cannot be sure, as the man was not under medical care at the beginning.

There is only one of the important signs of anterior poliomyelitis absent from this case, viz., the regression of symptoms, which consists in the return of power to certain of the muscles involved in paralysis at the onset of the disease, leaving only a portion of the muscles at first paralyzed to remain so, and subsequently to atrophy. This symptom is regarded as almost pathognomonic by Wood.[1] Indeed, the disease described by Dana,[2] under the name of chronic poliomyelitis appears to be little more than the acute form *minus* this symptom of regression. But the acute onset of the disease in this patient would forbid us labelling his affection chronic. So, in spite of the absence of the symptom of regression, I think, after looking at the case from these several points of view, that we may conclude that the paralysis and atrophy in this case were produced by an acute inflammation of certain of the multipolar cells of the anterior cornu of one side of the cord. In short, the case is one of acute anterior poliomyelitis.

I may add that under treatment, which has consisted in the administration of large doses of strychnin and the application of electricity, some improvement has resulted. When last tested with the dynamometer his record was: right hand, 28; left, 88.

WESTINGHOUSE BUILDING.

A CASE OF DOUBLE UTERUS AND DOUBLE VAGINA.

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA.

A BRIEF account of personal experience with a case of double uterus and double vagina may be of clinical as well as anatomic interest.

A woman, eighteen years of age, born in this country of German parents, and of rather stout build, was first examined by me on November 8, 1892, at which time I noticed a crescentic-shaped fringe of mucous membrane attached to the entire length of the anterior face of the cervix upon the median line. This began at the anterior border of the os, whence it passed up to the cervico-vaginal angle, and became lost upon the anterior wall of the vagina. The effect of this during a speculum-examination was to so tilt the cervix forward as to make examination difficult. It, of course, at once occurred to me that this was an instance of arrested development that might have been more interesting had the natural processes stopped sooner.

I made twelve specular and four digital examinations of this patient up to March 30, 1893, upon which date I found, mainly by accident, that she had a double uterus, of the variety known as *uterus bicornis*. The discovery was made while about to dilate the cervical canal, preparatory to curetting the body for menorrhagia. The cervix being tilted forward by the traction of the anterior blade of the speculum upon the frenum just described, I sought to depress the os with a probe by making counter-pressure. The probe slipped, and in

[1] American Text-book of the Theory and Practice of Medicine, vol. i, p. 764.

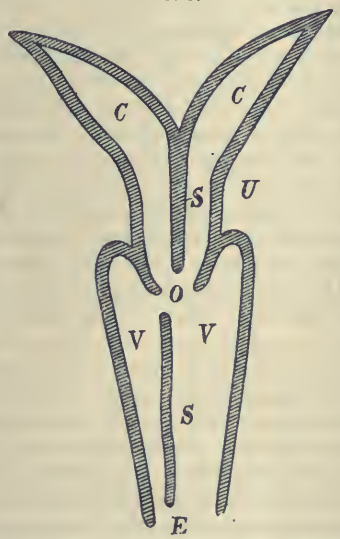
[2] Text-book of Nervous Diseases.

doing so exposed a septum within the canal a little back of the os. The view resembled that of the nares, with the anterior portion of the septum gouged out. While on previous occasions there had been no noticeable difficulty in passing a probe either to the right or to the left, I now found that this could not be done except upon its withdrawal and reintroduction. If passed into the right orifice, the probe turned most readily forward, and to the right, but could hardly be forced to the left, and then only by the spontaneous intra-uterine bending of the probe and decided discomfort to the patient. Similar maneuvers on the other side were followed by corresponding results.

Bimanual examination had been unsatisfactory all along because of the thickness and solidity of the hypogastric fat; but by a special effort I was now able to unmistakably make out the absence of a uterine body, and I could as positively distinguish the two horns of the bifid uterus.

Within the next twenty-one days I made three more specular and six digital examinations, when I found that the woman had also a double vagina. This finding was accidental, and showed that Nature had actually been as delinquent as I had regretted her not having been at the time of the first examination. During the introduction of the speculum on this day I met with some resistance, and the patient winced. The instrument was withdrawn, and the introitus opened with the thumbs and forefingers, exposing to view a crescentic edge of mucous membrane about one inch from the opening, and

Fig. 1.



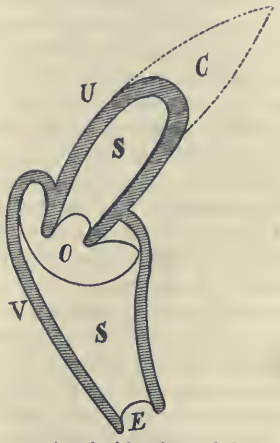
Representing a transverse section of the uterus. *U* is the uterus; *V*, the vagina; *C*, *C*, the cornua; *S*, *S*, the septum; *E*, the introitus vaginæ; *O*, the opening in the utero-vaginal septum.

almost in contact with the right side of the vagina. A more careful investigation showed the left canal to be decidedly the larger one, and this was in all probability the one through which entrance had been effected to the uterus by the speculum and the finger, as well as during coitus, which had been unattended with difficulty.

The septum was continuous to within about an inch or an inch and a half of the cervix. The finger readily detected the crescentic edge of the lower end of the vaginal septum, while the similar upper end could be distinctly felt by introducing the finger up to the os and then hooking it over the upper edge of the septum, and passing it as far down upon the right side as the length of the finger, together with the elasticity of the parts and the sensitiveness of the patient, permitted. The same procedure could be carried on in the opposite canal.

It thus required a total of fifteen specular and ten digital examinations to establish this anomaly. The

Fig. 2.



Representing a sectional side view of the uterus and vagina *U* is the uterus: *V*, the vagina; *C*, the left cornu bent away from the sectional surface and shown in dotted outline; *E*, the introitus vaginæ; *S*, *S*, the utero-vaginal septum; *O*, the opening in the septum.

difficulties in the way of an immediate diagnosis of the condition at the first examination were real and as peculiar as the condition itself. Rare as this anomaly is, its existence in the form described in this instance is still more unusual, perhaps unique. The dilatation of the left vaginal canal readily permitted the entrance of the examining finger without noting the septum. The same is true of the use of the speculum. The deficiency of the septum at its upper end kept it from view in all ordinary examinations, so that it could not be readily felt in ordinary digital explorations. It left the cervix free except at its anterior surface, and this would generally be accounted for, I believe, as I did. The stoutness of the patient, especially as regards her abdominal walls and viscera, precluded the ready recognition of the bifid uterus. The recession of the intra-uterine septum to a point far enough within the cervical canal to be invisible during the manipulations of an ordinary examination made its early discovery unlikely.

The one thing that should have called attention to the true condition earlier was the inability to explore the cavity of the uterus on both sides without the reintroduction of the probe. But I had never noticed this peculiarity until I had discovered the double canal, and this was in all probability owing to there having been no real need of intra-uterine explorations, so that it made no difference whether the probe lingered in the cavity or not, it being introduced only to determine the length of the organ, which was found to be fully three and one-half inches.

This patient had and still has very good health. She presents no other anomalies.

She was married at seventeen years of age and had been pregnant twice, on both occasions inducing abortion at the end of six weeks.

2353 NORTH SEVENTEENTH STREET.

MEDICAL PROGRESS.

Removal of a Large Vesical Calculus by Celiotomy.—MILTON (*Lancet*, No. 3655, p. 687) has reported the case of an Egyptian fellah, aged sixty years, who gave a history of having suffered with the symptoms of stone in the bladder for two years, and with total incontinence of urine for two years, although it was believed that the man had no adequate notion of the length of time. Upon examination a mass could be felt extending from the prostate to the umbilicus, and a loud click was evident on sounding. The urine was ammoniacal and contained mucus, blood, pus, albumin, tube-casts, and bilharzia eggs. The patient was bedridden and greatly exhausted. As the stone was evidently so large that it did not seem possible that it could be removed without making so large an opening in the bladder as to involve the peritoneum, it was decided that it would be safer to open the peritoneum at the beginning of the operation, and to take the necessary precautions to avoid its infection. The patient was chloroformed, and, after the usual precautions to insure asepsis had been taken, an incision was made in the abdominal wall from the pubes to the umbilicus. A small extra-peritoneal incision was then made into the bladder, in order to make sure that the mass was not constituted of several calculi, and also to permit of the cleansing of the cavity of the bladder with a boric-acid solution. As it was found impossible to detach the peritoneum from the upper surface of the bladder without opening the serous cavity, the peritoneum was incised from the bladder to the umbilicus. The lower extremity of this incision was little by little prolonged backward for about two inches, on the summit of the bladder, until its posterior limit was reached, the peritoneum being dissected from the bladder and dragged slightly forward before being incised, so as to obviate any danger of the serous surface being soiled by the contents of the bladder. As soon as the peritoneum had been opened sufficiently, its general cavity was shut off with plugs of sterilized gauze. The bladder was now incised to the full extent of its anterior and superior surfaces, and the stone was exposed. It could not be grasped with forceps, and pressure from below, with two fingers in the rectum, failed until two lateral incisions of the bladder-wall had afforded increased space, and allowed of easy delivery. The bladder was now thoroughly cleansed with a boric-acid solution, the peritoneum being closed with catgut sutures, the bladder with silkworm-gut sutures, and the abdominal incision with silver-wire sutures. A sufficient opening was left in the abdominal and vesical walls for a siphon drain, which reached to the post-prostatic pouch. The patient had a severe struggle for existence for the first eight days after the operation, his kidneys failing to act, the amount of urine sinking to ten ounces on the fifth day, and the temperature falling below normal. On the sixth day, as the siphon was clogged and would not work, the bladder was punctured through the perineum. On the thirty-fifth day, the patient having shown indications of the presence of another calculus, the perineal wound, which had closed, was reopened, and a uric-acid stone, weighing twenty-three grains, was removed. The patient's condition now improved, but as no power of expulsion was regained by the bladder, the perineal and supra-pubic fistulæ had from time to time to be reopened. The patient ate well, slept well, and went out of doors, but he never gained in weight. Two months after the first operation he began to sink, and died ten days later. For the last five days of life, in addition to his ordinary food, he was given one or two raw kidneys. Upon post-mortem examination, the bladder was found to be thickened and contracted, but otherwise healthy. The peritoneum showed no trace of surgical interference. Both kidneys were in a condition of advanced chronic apostomatous inflammation, and contained bilharzia worms. The stone removed from the bladder weighed 34½ ounces. Its largest diameters were four inches and six inches. The outer layers were constituted of magnesian phophates, but no examination of the inner layers was made, as the stone was not cut. It is believed to be the largest stone ever successfully removed from the human bladder.

Hemiplegia following Diphtheria.—EDGREN (*Deutsche medicin. Wochenschr.*, 1893, No. 36, p. 864) has reported the case of a boy, with a good family history, who had had measles and whooping-cough, and at the age of nine years an attack of diphtheria. This last illness was attended with severe vomiting. At the close of the third week, during convalescence, the little patient suddenly fell to the floor from the chair upon which he was sitting. It was not observed whether consciousness was lost or not, and whether paralysis was present or not, but on the following day it was noticed that the right side of the body was paralyzed, and that the power of speech was wanting. The patient himself was able to recall that for some time there were twitchings in the tongue and in the upper and lower extremities upon the right side. The right angle of the mouth was lower than the left; the right cheek and right half of the chin were motionless; but both eyes could be closed. The right arm and the right leg hung relaxed, though capable of feeble movement. The patient could not speak and could make only unintelligible nasal sounds. On attempts at swallowing, fluids would return through the nostrils. Sensibility was lost upon the right side, and this side was also colder than the left. Urine and feces were passed incontinently. In the course of five or six weeks the patient was able to walk about the house by supporting himself. This improvement continued, and in several weeks more he was able to speak intelligibly, though for several months in a nasal tone. The only further complication was a transitory paresis of accommodation. Examination a year later failed to reveal a cardiac lesion. Slight paresis of the lower portion of the face persisted. The tongue was protruded a little to the right. The left arm was somewhat stronger than the right. In walking there was a little stiffness, dragging and swinging of the right lower extremity, the movements apparently not being under perfect control. The

right hand became cyanotic when held dependent for a time. The ulnar reflexes were alike on both sides. The patellar reflexes were energetic and that upon the right more pronounced than that upon the left. The Achillis tendon-jerk was also more active upon the right than upon the left; and upon the right there was ankle-clonus. The sense of localization was less good upon the back of the fingers of the right hand than upon the back of those of the left hand. Electric sensibility was less perfect in the extremities upon the right than upon the left side. The electric irritability of the muscles upon the right side was diminished, but there were no qualitative changes. Considerable improvement followed treatment with electricity. A diagnosis of hemorrhage into the internal capsule of the left cerebral hemisphere was made.

The Motor Manifestations of Sciatica.—In a study of fifty-three cases of sciatica under observation at the Clinic for Nervous Diseases at Breslau, Mann (*Deutsche Archiv für klinische Medicin*, Bd. li, H. 6, p. 583) found that the affection is frequently attended with pareses, involving not only muscles supplied by the sciatic nerve, but also muscles supplied by other branches of the lumbo-sacral plexus. The flexors of the leg appeared to suffer most commonly. The paretic muscles usually displayed but slight atrophy and little or no change in electric irritability. When the paresis involved the muscles of the erector spinæ mass there resulted a typical form of scoliosis, the convexity of the curvature being directed toward the affected side (crossed scoliosis). The sciatic neuralgia may be unilateral, although the disease of the lumbo-sacral plexus, together with the disturbances of motility, may be bilateral. If, under these circumstances, the erector spinæ mass upon the side not affected with neuralgia is paretic, an homologous scoliosis results, the convexity of the curvature being directed toward the non-neuralgic side. At the same time, the possibility of the development of an homologous scoliosis as a result of spasm of the erector muscles upon the neuralgic side cannot be excluded. If the sciatica is attended with bilateral paresis of the abdominal muscles, lordosis of the lumbar spine will result—a condition that may be designated as lordotic sciatica.

Gunshot Wound of the Gravid Uterus.—Kehr (*Wiener medicinische Blätter*, 1893, No. 30, p. 391) has reported the case of a woman, thirty-nine years old, illegitimately pregnant, who attempted to commit suicide by shooting herself through the abdomen and uterus. The abdomen was opened and the bullet found to have entered the anterior wall of the uterus; bladder and intestine had escaped. The wound in the uterus was approximated by two rows of sutures and the abdomen closed. The operation occupied forty-five minutes. The subsequent course of the case was afebrile. For the first few days the woman complained of sacral pains and of a feeling as if labor were about to set in. From time to time a little bloody secretion escaped from the vagina. For eight days the urine was withdrawn with the catheter. The sutures were removed ten days after the operation, the wound having united by first intention. The patient arose from bed on the 12th day. On 14th day labor-pains set in and an uninjured fetus of about five months was expelled. The placenta failing to come away, it was found adherent to the anterior wall of the uterus, but was readily detached. The bullet, however, was not to be found. The uterus contracted well and the puerperium pursued an afebrile course. On the 10th day after the abortion the woman was out of bed, and on the 14th day she was dismissed.

Cirrhosis of the Liver in a Child.—At the recent Congress of the French Society for the Advancement of Science, d'Espine (*La Médecine Moderne*, 1893, No. 63, p. 796) reported the case of a boy, six and a half years old, who had been robust until the appearance of symptoms of hypertrophic cirrhosis of the liver, which terminated fatally at the end of three years. The liver extended two fingers' breadth below the level of the umbilicus; the spleen was enlarged; an ascitic effusion occupied the peritoneal cavity; and the veins of the anterior abdominal wall were greatly enlarged. In the course of the illness it became necessary to perform paracentesis thirty-six times. Potassium iodid had been tried, but without encouraging results. There was an absence of fever, except during the last six months of life, when there was slight elevation of temperature. There had never been albuminuria or icterus. After death, in addition to an intense interstitial hepatitis, the left pleural cavity was found obliterated, while the right was occupied with an effusion of fluid. The pericardial cavity was also obliterated, and the stomach was adherent to the liver. There was some ascitic fluid in the peritoneal cavity, together with evidences of chronic sclerotic peritonitis. There was also a perihepatitis with numerous adhesions of the liver at numerous points; and also a perisplenitis.

Diabetes Mellitus in an Infant.—Tavaria (*Indian Medico-Chirurgical Review*, vol. i, No. 7, p. 402) has reported the case of a Parsi male child, ten months old, which, following a fall out of its cradle, was wakeful and restless at night, uttering shrill cries from time to time. Earache was suspected, but there was no aural discharge and treatment was unavailing. The temperature rose to 102° and 103°, with slight remissions. It was now noticed that the child passed urine at short intervals, two or three times in the course of an hour. The total amount passed was large, although it was not measured. Flies collected in swarms about the wet napkins. The child cried constantly for drink and swallowed diluted cow's milk and mother's milk repeatedly in fairly large quantities. On examination the urine was found to contain sugar. The specific gravity was not ascertained. After the first week the child was greatly debilitated, though not emaciated. Some two weeks after the fall it was seized with pneumonia and rapidly succumbed. It had always been fed upon mother's milk and diluted, unskimmed cow's milk. The history of the case, the age of the patient, and the absence of other cause suggest a nervous origin for the glycosuria.

The Treatment of Chronic Suppurative Otitis Media by Excision of the Auditory Ossicles.—At the recent meeting of the British Medical Association, Milligan (*British Medical Journal*, No. 1706, p. 563) reported 15 cases of chronic suppurative inflammation of the middle ear treated by excision of the membrana tympani and the

auditory ossicles, and announces the conclusion that in cases of chronic suppurative disease of the middle ear accompanied by perforation of Shrapnell's membrane and the presence of parietal and ossicular caries, and in which careful local treatment has failed to effect a cure, the membrana tympani and the auditory ossicles should be excised. As a rule, the purulent inflammation ceases or greatly diminishes as a result of the operation, while such symptoms as vertigo, tinnitus, etc., are either cured or greatly relieved, and recurring attacks of headache are prevented. The power of hearing is usually either improved or remains unaffected, although in a few cases it is rendered a little worse. In cases of chronic disease of the attic, with a normal atrium, only the membrana flaccida Shrapnelli being perforated, the excision of the membrane and the ossicles, or the performance of some similar operation, is probably the only means of cure.

The Diagnostic Significance of Acetonuria.—HIRSCHFELD (*Deutsche medicin. Wochenschrift*, 1893, No. 38, p. 914) has found that upon a diet exclusively albuminous and fatty, acetone is excreted in the urine in increased amount. The addition of carbo-hydrates to the diet will prevent the development of acetonuria, *i. e.*, it leads to the destruction in the organism of the acetone formed. The fact whether or not a notable amount of the albumin of the body is destroyed has no influence upon the development of acetonuria. If large amounts of acetone are excreted in the urine diacetic acid will also be found to be present. In cases of diabetes in which the carbo-hydrates ingested are not largely burned up in the body acetone is excreted in large amounts. A diminution can be brought about by giving large amounts of carbo-hydrates or by adding glycerin to the diet. Some patients that died of diabetic coma presented progressive acetonuria in association with increasing loss of strength. No other than the diabetic forms of pathologic acetonuria is at present known. In all of the other conditions in which acetonuria has been observed (fever, carcinosis, gastric disorders) this was to be ascribed to a poverty of the diet in carbo-hydrates. In these conditions the acetonuria can be made to disappear by the administration of amylaceous or saccharine food.

Scarlatina Followed by Endocarditis.—LEA (*Medical Chronicle*, vol. xviii, No. 6, p. 395) has reported the case of a girl, seven years old, in which on the ninth day of an attack of scarlatina a systolic bruit became audible at the apex of the heart. The child had previously enjoyed good health, and had never had rheumatism. When she first came under observation, four days after the onset of her illness, the heart-sounds were normal. The murmur increased in intensity and was transmitted to the axilla. The urine at first contained no albumin, but on the twelfth day a faint trace was detected. Death took place on the thirteenth day. Upon post-mortem examination the left ventricle was found dilated, the cardiac muscle pale and smooth. Upon the auricular surface of the mitral leaflets were numerous vegetations. There was no evidence of pericarditis. Two days before death gelatin-cultures were made from blood obtained from a finger, and in the course of three days colonies of the streptococcus pyogenes developed. Cultures made from the vegetations upon the mitral valve also led to the development of the streptococcus pyogenes and of streptococci as well.

Scarlatina in a Man aged Seventy-nine.—HOWIE (*British Medical Journal*, No. 1706, p. 578) has reported a case of scarlatina in a man seventy-nine years old. The patient has sore-throat, the soft palate, fauces, and pharynx being intensely red and one tonsil presenting small, white patches. The pulse was 84, and the highest temperature 100°. There was no well-defined rash—only a slightly reddened prominence of the cutis at the various points of emergence of the hairs on the skin of the legs over the tibialis anticus muscle. No source of infection was known. After nearly three weeks the hands desquamated freely. In another case of scarlatina in a man, aged fifty-two, the rash was well-marked, although discrete. The children living in the same house were subsequently similarly stricken.

Posterior Luxation of the Lower Jaw.—BISCHOF (*Münchener medicin. Wochenschr.*, 1893, No. 31, p. 584) has reported the case of a man, nineteen years old, under treatment for pulmonary tuberculosis, who presented some difficulty in deglutition, to determine the nature of which a pharyngoscopic examination was undertaken. Suddenly, while attempting to open the mouth to the utmost, a snap was heard and the jaw was elevated. Thereafter the lower jaw could not be moved. The teeth of both jaws were correspondingly approximated posteriorly, but anteriorly the lower teeth were somewhat behind the upper. Examination gave so much pain that it was not pursued further. It was concluded that the lower jaw had been displaced posteriorly, but the condition of the patient forbade attempts at reduction.

To stain Tubercle-bacilli, CZAPLEWSKI (*Arb. aus dem Path.-Anat. Inst. zu Tübingen*, 1892, B. i, H. 3; *Monatsh. f. prakt. Derm.*, B. xvii, No. 4, p. 174) recommends the following procedure: The sputum is first spread in a thin layer upon a slide, dried in the air, and carefully passed through the flame of a Bunsen burner. Then carbol-fuchsin is added, and heated until the vapor of steam arises, when a solution constituted as follows is dropped upon the slide held obliquely, until the surface is cleared: hydrochloric acid and sodium chlorid, each 2½ parts; distilled water, 100 parts; a solution is made, and alcohol, 500 parts, added. The slide is then washed with water, permitted to dry in the air, and finally a drop of some immersion-oil added that can be readily removed by xylol.

The Nature and Pathogeny of Scrofula.—At the recent Congress of the French Association for the Advancement of Science, BLOCH (*La Médecine Moderne*, 1893, No. 63, p. 792) contended that scrofula is neither an affection of the lymphatic system nor an alteration of the blood, nor yet a disturbance of nutrition, but the result of a derangement of the bodily equilibrium, a perversion of development in one or several organs during intra-uterine life. The condition is thus of the nature of a degeneration, a morbid deviation from the normal type, which predisposes to certain affections, tuberculous and otherwise. It may be a manifestation of a morbid heredity, neurotic, tuberculous, or alcoholic, or a result of syphilis in father or mother.

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TRAUMATIC HYSTERIA.

FEW subjects are of more practical importance to the general physician, to the surgeon, and to the expert in nervous diseases than the exact nature of the nervous disorders following trauma. Considering this importance we think it remarkable that the subject remains still somewhat obscure, in spite of the otherwise luminous writings of the many scientists, in this country particularly, who aim to make a specialty of treating it both in court and out. It is said to have been not without cause that BENTHAM feared metaphors, but it might be with better cause, if he lived now, that he feared euphemisms. This whole subject is clouded with euphemisms. Of these the most objectionable, because most frequently employed, are "traumatic neurosis," "traumatic neurasthenia," "spinal concussion," and, if we dare call it an euphemism, "railway spine." These terms have evidently a common source—the wish to avoid the use of any expression that may convey the idea that the patient's condition is dependent in any degree upon a mental state. This wish is made obvious by the fact that any term connoting a mental state is rarely to be found as a designation of this traumatism in the works of recent American neurologists; and, we are not venturing much if we say, in the works of all recent neurologic writers outside of France. The source of this wish is not hard to be determined. In the exigencies of expert testimony, amidst the perils to justice in a trial by jury, it is felt instinctively that the admission of the presence of a mental element in a litigant would be fraught with great danger to the success of his suit in a trial for damages. This, we do not hesitate to say, is the motive.

That such a motive is the best adapted to confuse the subject is easily demonstrated. It tends to do this, first, because the mental element in these cases is paramount. In fact, in those cases in which no organic defect can be demonstrated (and these alone concern us here), the mental element is the essence of the affection. Hence, to ignore it, or to attempt to disguise it under euphemistic terms, is to put constantly in the background an element so essential that without a due regard for it no just idea of the subject can be either obtained or inculcated; and secondly, because this motive leads to a division into distinct categories of cases that are essentially of one and the same nature. We mean by this that traumatic cases, marked by most or many of the permanent stigmata of hysteria, and by nothing else, are separated, especially if the patients are litigants, from the great class of hysteria in general to which properly they belong. This leads to a confusion in nomenclature, and, far worse, to an error in fact. Let us examine briefly into this phase of the subject.

The same symptoms serve for the two classes of patients; that is to say, the inter-paroxysmal symptoms of hysteria proper serve also for the cases of "traumatic neurosis." This is indeed Protean and chameleon-like! Among the most important of these symptoms are the following: Various areas of anesthesia, either hemi-anesthesia or anesthesia in geometric figures—purely hysterical symptoms—these areas changing either by transfer from one side to the other or by alterations in size, shape, and location; paralyses, often associated with segmental anesthesia of the part (a very uncommon association in any but hysteric paralyses), showing a tendency, although not always, to recover on suggestion, *i. e.*, under moral influence or after a favorable verdict, and not presenting true atrophy or reactions of degeneration; contractures, often most persistent, as of an arm or of a hand on the arm; tremor, simulating most closely that of organic disease, and yet one of the most important and characteristic of the permanent stigmata (its presence after trauma ought always to suggest hysteria, especially in men);

incoördination and various *bizarre* affections of the gait known as astasia-abasia—a well-recognized hysterical symptom; contraction of the visual fields, alterations in the color-fields, monocular diplopia, and amblyopia of one or both eyes—the very earmarks of hysteria; finally, neuralgias and hyperesthesia, especially about the head and spine.

To class all these, or any combination of these, as indicating anything other than inter-paroxysmal hysteria is to run a grave risk of confusing an important subject and of committing a solecism in science.

Whence comes this aversion of writers in the English and also in the German language to the term *hysteria?* Is it an ethnic prejudice, or is it in the present case a shy regard for the prejudices of courts? BRODIE, in England, ROMBERG and VALENTINER, in Germany, demonstrated long since that hysteria is sufficiently frequent in both those countries; while in later years GUINON, GILLES DE LA TOURETTE, and the contemporary French school have shown incontestably that one of the most common causes of hysteria is trauma. But in Germany quite recently, and in England and America even more recently, a current of totally different ideas, under the influence of OPPENHEIM, has been established. This school seeks to establish a special neurosis, due to trauma, to which the name of hysteria is denied, but which is based upon many of the permanent stigmata of hysteria. This, as we have seen, has no justification in nosology.

We can illustrate this subject best with a brief reference to a very interesting case. PEL (*Berlin. klin. Wochenschrift*, 24, xxx, June 12, 1893) reports the case of a carpenter who fell from a high scaffold and was picked up unconscious. After regaining consciousness he exhibited during a period of about one year a variety of symptoms, the most important of which were the following: occipital headache and pain in the cervical spine; weakness in the right side, followed later by hemiplegia; vertigo and general weakness, which prevented his continuing work, to which he had returned after four weeks; later, depression of spirits and somnolence; increased knee-jerks; for a while normal use of the limbs during dorsal decubitus, but astasia-abasia while standing; later, with the onset of the hemiplegia, there was hemi-analgesia, hemi-anosmia, hemi-amblyopia, and bilateral loss of taste; later still, a typical hystero-epileptic crisis occurred. On the negative side the patient had no vomiting, no hemorrhage from ear or nose, no incontinence of urine, no choked disc, nor any change in visual or color fields. He died from catarrhal pneumonia more than one year after the accident, and a thorough autopsy revealed no organic lesion that could explain the symptoms.

To conclude, it seems necessary that the idea that hysteria is synonymous with simulation must be eradicated before this subject of hystero-traumatism can be placed for American readers in an advantageous scientific position. This idea at best is but a vulgar error. Those who entertain it are likely to find simulators in inverse proportion to their own expertness. The plea we make is for consistency in nomenclature, which is the first essential for clearness in scientific thought and expression.

FURTHER FACTS REGARDING THE BACILLUS AËROGENES CAPSULATUS.

WE have already on two occasions in these columns referred to the pathogenicity of the bacillus aërogenes capsulatus, and to the symptoms and lesions to which it is capable of giving rise in the bodies of men and animals. Examples of infection in human beings are now being reported from different quarters, and it seems probable that they are not so uncommon as was at first believed. P. ERNST, of Heidelberg (*Virchow's Archiv*, Band cxxxiii, Heft 2), records two interesting cases. The first was that of a woman of twenty-six, who had aborted at the fourth month, the fetus being partially decomposed. Septic endometritis followed and soon proved fatal. At the autopsy, made three hours after death, the walls of the uterus were found to be partly gangrenous and to contain bubbles of gas. Scattered throughout the liver and heart-muscle were necrotic nodules surrounding cavities filled with gas, and bubbles of gas could be seen in the bloodvessels all over the body. The second case was that of a man, fifty-five years of age, who died of peritonitis subsequent to perforation of the intestine. After death, bubbles of gas were found in the bloodvessels everywhere, and the liver was thickly studded with little cavities containing gas (*Schaumleber*). The bacilli were particularly abundant wherever the gas was present, and ERNST, by anaërobic cultures and experiments on animals, proved the organism to be identical with that described by WELCH and NUTTALL.

The description of an unusually interesting case

has recently appeared in the *Columbus Medical Journal*. A woman of thirty-five, a patient of Dr. S. H. Steward, was suddenly seized one morning with a severe chill. This was followed by pain of such intensity in the back and in the right leg and thigh as to require for its relief the administration of morphin. About ten hours after the onset the subcutaneous tissues of the body from head to foot became emphysematous, and the surface of the skin assumed a diffuse scarlet discoloration. The woman complained of feeling numb and bloated, and her urine was suppressed. She died quite suddenly some fourteen hours after the initial rigor, although conscious and capable of carrying on conversation up to within three minutes of her death. After death the gaseous distention rapidly increased and became extreme; the ruby-red discoloration of the skin gradually changed to a yellowish-brown tint. Dr. J. F. Baldwin, who was consulted with regard to the case, suggested the possibility of an infection with the gas-bacillus and urged that a post-mortem examination be made. At the autopsy inflammable gas was found everywhere, the blood-vessels especially showing the characteristic beaded appearance. The uterus gave evidence of a recent abortion and no doubt represented the portal of infection. Dr. Graham examined the blood bacteriologically, found the bacilli, and was able to reproduce by injection into animals the typical phenomena with which our readers are already familiar. This case goes far to confirm the view previously advanced that the numerous cases recorded as instances of death due to entrance of air into the uterine veins after abortions and injections have really been instances of infection with the bacillus aërogenes capsulatus.

It is curious to note that similar cases were recorded, more than a century ago, by John Hunter, although naturally he could not understand their full significance. The types of infection observed at that time agree so well with those recently described that we cannot refrain from quoting the following from his *Lectures on Surgery:*

"In these cases the body immediately after death becomes emphysematous; this emphysema, though it does not occur during life, would yet appear to be an effect of life, for it depends on disease as the body is dying. . . . It occurs immediately after death, or perhaps in the act of dying. . . . I have myself seen several very remarkable instances of its occurrence. The first was that of a young lady about four months gone with child, who, in March or April, about two or three in the afternoon, was suddenly taken ill with a fit, of which she shortly died. She was opened the next morning at seven o'clock, when the body was found swelled with air extravasated in the cellular membrane; the mesentery, intestines, liver, and heart were loaded with air, the blood worked out of the larger vessels mixed with air, and the body had become very offensive. Another case of this kind occurred at St. George's Hospital in a man who had an encysted tumor in the upper belly of the right rectus muscle, which contained a fluid. It was opened on Friday, and on the Monday following he became ill, and died at one o'clock. He was opened seventeen hours after death, and was found emphysematous, just as in the former case. This appears to be similar to what is commonly termed sphacelus, being a species of mortification occurring before death or in the act of dying. . . . A man at St. George's Hospital had the operation for popliteal aneurism performed. . . . The case went on well till the sixth day, when ulceration took place in some part of the artery; . . . considerable bleeding took place and recurred several times afterward . . . (and) in the end (was) the cause of death. Immediately after the first bleeding I observed the foot and leg of the diseased side to become cold as high as the middle of the calf. . . . Before he died, (in) the upper part of the leg . . . a vesication formed, discharging a bloody serum, and they became darker, as if blood was diffused in the cellular membrane, and edematous, or rather, emphysematous."

How the soul of the enthusiastic student of hedgehogs would rejoice could it be made conversant with the satisfactory explanation of these cases which the science of bacteriology has afforded.

THE DISCOVERER OF SURGICAL ANESTHESIA.

To the vast majority of the present generation, surgical anesthesia is simply a fixed fact—one of the available advantages of modern life, like the railroad or telegraph. When people must have a tooth drawn, they expect to inhale nitrous-oxid gas; if any other and graver operation is necessary, they look, as a matter of course, to ether or chloroform for the prevention of pain. They care no more to inquire who discovered either of these agents than they do about the inventor of the first wheel or the first lever. Yet it is well within the memory of many now living that the announcement was made that the surgeon's knife was robbed of its ancient terrors.

It is somewhat curious to look back at the early history of this great improvement, to which our attention has been called anew by an article recently published by Dr. Grandy, of Atlanta, Ga., and to note that in the changed conditions of the present day the actual facts would be much more readily established. Hardly had the medical pro-

fession become aware of the boon conferred upon its members and upon their patients, when a most unseemly struggle began between rival claimants to its paternity. MORTON, the dentist, who first notified DR. WARREN, of Boston, that he believed surgical operations could be done without pain by the inhalation of a certain vapor, undertook to obtain a patent for this article under the name of "letheon." Whether or not he ever succeeded, we have been unable to learn; but, in fact, sulphuric ether was freely used as an anesthetic by the profession at large within a very short time after the publication of DR. WARREN'S experience with it. A strenuous controversy arose between MORTON, WELLS, and JACKSON, the two latter claiming the credit of suggesting the idea which MORTON carried out and continued for many years. It was not for the honor of priority, but in the hope of pecuniary profit by an award from Congress, that this battle was fought.

And here we may recall the joke of DR. O. W. HOLMES, when a monument to the discoverer of anesthesia was proposed, and the question came up which of the claimants should be named. "O," said the witty doctor, "just put 'MORTON—JACKSON—WELLS—Either.'"

But the fact seems to be that nearly five years before DR. WARREN acted upon MORTON'S suggestion and operated upon a patient under the influence of ether, a modest practitioner in the town of Jefferson, Ga., CRAWFORD W. LONG by name, had actually tried the same experiment, and repeated it with success in a number of cases. *He it was who first discovered surgical anesthesia.* He was led to it by observing that persons inhaling ether, as was then often done for amusement, were unconscious of pain from injuries sustained while under its influence. It was a true philosophic deduction.

Be it remembered that in those days communication with the great centers was far more restricted than now, and that medical journals were not published at all the cross-roads throughout the country. Moreover, operations were more rare, especially in small villages such as the one where DR. LONG carried on his practice. It is, therefore, not surprising that his light was eclipsed by those which shone in more prominent situations.

Abundant evidence of LONG'S priority in this matter was published by him in 1849, but attracted little notice. He also sought to obtain from Congress substantial recognition of his merits, but it does not appear that his application did more than prevent MORTON'S success in a like effort. And, indeed, great as have been the benefits accruing to mankind from the discovery of anesthesia, it may be questioned whether a recompense in money, especially if given in response to a demand, would not take off the fine bloom from a noble and dignified service, giving it a commercial aspect. It would be one thing for a Republic to make an exception to the proverbial ingratitude of such governments, and bestow a princely award upon a benefactor of the race; it is quite another thing for that benefactor to rise and request payment for his good deeds.

We trust that DR. GRANDY is well-informed as to the intention of the State government of Georgia to place a statue of DR. LONG in the Capitol at Washington. Such a tribute to his memory would be just and proper. The discovery of anesthesia must always rank among the great achievements of humanity.

EDITORIAL COMMENTS.

The Philadelphia County Medical Society and Nostrums.—At a meeting of the Philadelphia County Medical Society, held October 18, 1893, the following resolution was unanimously adopted:

"WHEREAS, Dr. James E. Reeves, of Chattanooga, having denounced the so-called "Amick Cure" for consumption as a quack nostrum, and stated that its proprietor was not a physician in good and regular standing, was accused of criminal libel; and

"WHEREAS, The grand jury has ignored the indictment brought against him, be it

"*Resolved*, That the Philadelphia County Medical Society congratulates Dr. Reeves on his bravery, a bravery unfortunately too rare at the present day, and tenders him sympathy in the persecution to which he has been subjected;

"*Resolved*, That no person who makes, deals in, or advertises as a cure a quack nostrum, that it is say, a preparation the composition of which is kept secret, can be termed a physician in good and regular standing, because such action is *ipso facto* sufficient to cause forfeiture of membership in this or any other County Medical Society governed by the laws of the American Medical Association.

Resolved, That a copy of these resolutions, duly attested with the signature of the President and Secretary and with the seal of the Society, be forwarded to Dr. Reeves, and that they be handed to the press for publication."

Every medical society in the United States should pass similar resolutions. The indifference or pusillanimity of the medical profession in the face of the outrageous nostrum-traffic of the country, carried on within and without the profession, is one of the gravest evils and dangers that afflict the profession. There should not be another day's delay!

The Wilder Quarter-Century Book is for youthful America the first instance that we know of the beautiful German custom of celebrating and honoring great teachers by

the *Festschrift*. At the close of his twenty-fifth year of service in Cornell University "some of his former students" have united in loving gratitude to present Professor Wilder a collection of original papers on physiologic investigation. The volume is a simple but handsome large octavo of some 500 pages, and contains a series of admirable papers, among which is a study in evolution, on "Temperature and Vertebræ," by President Jordan, of the Leland Stanford Junior University; one by Professor Comstock on "Evolution and Taxonomy"; one by Mr. Pierre A. Fish on "Brain Preservation"; one by Professor Gage on "Brook Lampreys," and a number of others. Six of sixteen of the articles are by physicians: Dr. E. R. Corson discusses "The Vital Equation of the Colored Race and its Future in the United States"; Dr. Theobald Smith writes of "The Fermentation Tube, with Special Reference to Anaërobiosis and Gas-production among Bacteria"; Dr. W. C. Krauss treats of "Muscular Atrophy considered as a Symptom"; Dr. H. M. Biggs contributes "A Bacterial Study of Acute Cerebral and Cerebro-spinal Leptomeningitis," and Dr. V. A. Moore describes "The Character of the Flagella on Three Types of Bacilli."

The book has numerous illustrations, chief of which is a fine etched portrait of Professor Wilder. It was presented at the quarter-centennial celebration of the opening of Cornell University, held at Ithaca, October 6, 7, and 8, 1893. What a perfect method of expressing the grateful honor of pupils, whilst at the same time furthering scientific progress—and there are few men so worthy of such honor and devotion as this true scientist, gentleman, and friend, whose pupils and whose friends, indeed, are all of us.

Damages are Recoverable for Injuries Resulting in Miscarriage.—When a married woman is so injured by the negligence of another as to miscarry, her husband can recover damages for the loss of the child. So holds the Superior Court of New York City, General Term, in the case of Butler *vs.* Manhattan Railway Company. Here was an action brought by the husband to recover for injuries sustained by his wife, who was struck in the side by the gate which the train guard was closing. Damages were assessed by the jury in the sum of $2250, which was approved on the appeal. It is also to be noted that it was contended that the trial judge erred in excluding the testimony of two physicians as to what the woman told them of her physical history when they treated her at the Women's Hospital, inasmuch as by testifying to these facts herself she waived her privilege of excluding the physicians' testimony. The court, however, held otherwise on this point, especially because when asked about the statements made at the hospital, she had only said that they gave her two doses of medicine for her nervousness, and she did not know what statement she made after that. One of the doctors came to take her statement, but she did not recollect what she said. From this the court held that it could not be said that the witness opened the door of the consultation-room to the jury and undertook to give them a statement of what occurred between herself and the physician.

The Maternity Hospital.—To the medical mind there is no feature about the Abstract of the Report of the Board of Governors of the Maternity Hospital, just published, so gratifying as an analysis of the mortality. Among 132 cases treated during the year ending September 30, 1893, there were no deaths referable to the conditions that brought the patients to the hospital. Two women died from unavoidable causes, one from pulmonary tuberculosis, and the other from chronic nephritis. Of the 134 children born but 5 died. Three children were born still. Among 1875 women delivered during a period of twenty years, and of whom some nine-tenths were primiparæ, there were but 23 deaths (1.23 per cent.), 11 of which were due to septic causes (0.59 per cent.), and 12 to non-septic causes (0.64 per cent.); but for more than four years, among 565 women confined *there has not been a single death* due to preventable causes. Institutions that carry on work with such a record as this can never be too generously supplied with money, and the work itself makes a most earnest appeal for hearty support. Mr. William H. Ingham, 308 Walnut Street, is the Treasurer of the Board of Governors, and will be glad to receive donations.

"The Doctor" is the title of the engraving of a beautiful picture by an English artist, Fildes. So utterly wretched have usually been the attempts to unite medicine and painting that this remarkable instance deserves and has already received a merited success. The face of the physician is a perfect representation of the ideal nineteenth-century physician, a combination of intellect and conscience such, indeed, as is shown in thousands of real men. His mind and heart are equally absorbed in the problem of the disease and in the little sufferer before him. The intensely human element so admirably portrayed in the picture rivets the attention and teaches a lesson not soon to be forgotten by any observer.

Earnest Attempts to Raise the Standard of Entrance.—From the president of a medical college a medical student received a letter praising in the highest terms the tremendous advantages of attendance at the writer's college. The letter closes with these suggestive morally-strabismic words: "We hope that you will visit the College at the beginning of the Session of 1893–94, and become acquainted with officers and members of the Faculty and the students. We feel certain that you will be pleased and decide to matriculate with us. In doing so you will find that our requirements for admission are not more exacting than those with which our many students in the last eight years have found it easy to comply, and that we fully appreciate that many applicants are not fresh from school. I am yours, ——."

The Negro as Physician.—Among the encouraging signs of the elevation of the condition of the colored race in the United States, none is more hopeful than the growing number of colored medical students and physicians. It is somewhat strange that there should have been so many good lawyers before the medical necessity had hardly been thought of. Our medical schools should do all within their power to welcome colored students. It needs only the least humanity to recognize what great possibilities of good, both for this unfortunate race and for the medical profession, will lie in the existence of a trained body of colored physicians to carry to their own

people the science and the medical care they need so much.

An Omission.—The editor of the *St. Louis Clinique* and Charles L. Kerr, M.D., Falls City, Nebraska, will no doubt be interested, if not surprised, to learn that the dominant idea of an instructive paper on "Inductions in Making up a Diagnosis," which appeared in the September number of the *Clinique*, as well as three of the six columns of the text of the paper, is to be found in an address delivered by Dr. Lauder Brunton at the inaugural meeting of the New London Medico-Chirurgical Society, on December 17, 1891, and published in the *Lancet* and *British Medical Journal* for January 2, 1892. The failure to give the appropriate credit is no doubt an omission that both editor and contributor will be glad to make good.

SPECIAL ARTICLE.

NATIVE AND FOREIGN MEDICINE IN CHINA.[1]

BY J. G. KERR, M.D.,
OF CANTON, CHINA.

WHEN we consider the state of medicine in such a country as China, a feeling of surprise and disappointment will be experienced to find that it remains in a very crude and primitive condition. Physicians in cities and villages are numerous, but it cannot be said that there is a medical profession. There are no medical schools, no medical periodicals, no medical societies of any kind. Medical literature is abundant; but it is not to be compared to that in other departments. Physicians, as a rule, do not belong to the literary class, but their education must be sufficient to enable them to read the medical books and write prescriptions. The law prescribes no qualifications, and anyone is at liberty to practise who chooses to do so. Works on the practice of medicine, describing diseases, and giving recipes for their treatment, together with treatises on medicines and their uses, comprise the books which are read by those who aspire to practice.

When it is stated that the sciences do not enter into the education of Chinese scholars, and that anatomy, chemistry, physiology, and pathology are unknown as branches of medical education, it will be seen that the curriculum is very limited and that all practice in China is purely empiric. Taking a glance, however, at the vast population, upon which, during so many centuries, an innumerable host of physicians have had an opportunity of experimenting, we would expect results in the means of curing disease far beyond what have been attained. The books contain many prescriptions which are regarded as standard remedies in given cases, and there are numerous secret medicines which have a wide circulation, but so far as I know there are no remedies which would be an addition to our means of combating disease.

The *Pun-tso*, the standard work on materia medica is in thirty-two volumes, and describes medicines derived from the three kingdoms of Nature. These may be divided into three classes. 1st. Such as are common to us and to them; 2d, Those that are inert; and 3d, Those that are unknown to us. Those included in the third class consist mostly of vegetable substances, and when the botany of China is thoroughly studied many of these will prove to be known to us, and to belong to either the first or second of the classes named.

The theories which guide the administration of medicines are of such a nature as to obstruct the acquisition of correct knowledge. The organs of the body are supposed to hold certain relations to the five elements, earth, air, wood, fire, and water, and the relations which a given medicine is supposed to hold to one of these elements decides the applicability of the medicine. It is thus seen that clinical observation could not lead to a correct knowledge of the virtues of medicines as therapeutic agencies.

The Chinese have never in any department of knowledge inaugurated and carried out processes of investigation with a view of arriving at truth and eliminating error. They are, therefore, destitute of scientific knowledge, and in so important a matter as the use of remedies for the removal of disease they possess no methods that are the result of careful observations conducted on rational principles.

Having no knowledge of chemistry they use all medicines in the crude state, and having no accurate knowledge of the virtues of simple medicines, their compounds are made up of numerous ingredients put together in accordance with the fanciful theories referred to. Notwithstanding all the ignorance and absurdity involved in the theory and practice of medicine, the people have great faith in their medicines, and take more than any other people. Confidence in their doctors is not so well established as it is in the medicines. If one or two doses of a prescription given to a patient does not produce the desired effect another physician is called, and it is no uncommon thing for a patient to be prescribed for by three or four doctors in one day.

The entire ignorance of anatomy precludes any proficiency in surgery, and in fact no one of their numerous physicians pretends to perform the simplest surgical operation. The opening of abscesses or the removal of tumors is not attempted. The tying of an artery seems never to have been thought of, and the fear of hemorrhage has prevented the use of any cutting instrument. The extraction of teeth when they become loose, or the application of a poultice, or of splints to a fractured bone, may be said to comprise the whole of surgery as known in the oldest and most populous nation of the earth. As a consequence, all the diseases and injuries that are capable of relief by surgical aid go on, involving life-long misery or resulting in death.

No attention is paid to hygiene, and no measures are adopted by the public authorities for the protection of communities from epidemic diseases or for the isolation of patients suffering from contagious diseases.

Hospitals for the cure of the sick, asylums for the insane, the deaf and dumb, and for incurables, are unknown. These institutions exist only in Christian countries or where Christianity takes them. The friendless poor are often cast into the streets to die, the insane and incurable who become a burden to the family die

[1] Read before the Ohio State Medical Society, Put-in-Bay, June, 1893.

from neglect or ill-treatment, and there is reason to believe that not a few of them are put out of the way. The head of a family has the power of life and death over its members, and it would not be strange if the quickest and surest method should be taken to get relief from the burden and danger of an insane member.

To remedy such a state of things in India, the second most populous country of Asia, the British Government has established 1600 hospitals and dispensaries, and has opened 18 medical schools for the instruction of native youth, and thousands of qualified native physicians are now engaged in practice in that country. Twenty-five asylums are provided for the insane, with all the best methods and appliances known to the profession in Europe and America. The benefits conferred upon the human race by the labors of medical men—all the improvements of modern scientific research and toilsome experiment—have been given the millions of India without any effort on their part, without even the asking. For this grand work by our kinsmen and professional brethren of the British Isles, Christian civilization must have the credit.

The Empire of China is under the rule of a native dynasty, and has been slow to adopt the modern improvements of Western nations, except such as would conduce to the power of her army and navy. The Christian churches in Europe and America which have established agencies in that Empire for the propagation of Christianity have appreciated the sufferings of the people arising from the ignorance of their physicians, and have organized a system of medical missions which have done a vast amount of good and have prepared the way for the introduction of modern medicine and surgery into that great Empire.

The first medical missionary to China was Dr. Peter Parker, who landed in Canton in 1834. He established a hospital in 1835, which he conducted for twenty years, and which since 1854 has been under my charge. The Medical Missionary Society in China, the first of its kind in the world, was founded in 1835, and under its patronage the medical work in Canton has been sustained for more than half a century.

After the war with England in 1840–52, five ports were opened to foreign commerce, and in these hospitals were established, with missionary physicians, and as the country was further opened by the war of 1857–58, the number of hospitals increased, so that now there are more than 60 hospitals, between 40 and 50 dispensaries, and about 130 medical missionaries, of whom 25 are women. Besides the medical and surgical work done in all these hospitals and dispensaries, giving relief to tens of thousands of patients whom their own physicians could not cure, medical books have been translated into the Chinese language, and native students have been trained in the principles of Western medicine.

It is thus seen that medical missionaries, aided by their societies in Europe and America, are doing for China, by a slow and gradual process, what the British Government did for India in a comparatively short time. They are placing in the hands of the Chinese the benefits of all the labors of the men who brought to such perfection the means of curing disease and relieving suffering, which has made our profession such a blessing to the human race.

A few facts in reference to one or two lines of practice will give some idea of the vast benefit conferred on the Chinese by Western medicine. The first operation for the removal of urinary calculus was performed in 1844 by Dr. Peter Parker in Canton. In sixteen years he operated on 32 cases. In 1865 there were 17 operations; in 1869, 35 operations; and in 1875 the number of lithotomies and lithotrities amounted to 50. Since that time they have averaged in the Canton Hospital more than 50 each year. Last year my young associate, Dr. J. M. Swan, a native of Ohio, operated on 59 cases, with 57 recoveries and the results of 2 not known, and Dr. Mary Niles has operated on 2 cases in the female. Altogether not less than 1600 operations for urinary calculus have been performed, the most of them in Canton, giving relief from a disease which has caused untold suffering and death to thousands, and for which the native doctors had no means of cure.

Every physician knows the terrible dangers to which women are exposed in cases of difficult labor, and how often death may be warded off by methods that modern science has placed in our hands. We cannot compute the number of women and unborn children annually doomed to death in an empire of 300,000,000 of people for the want of the methods and the skill possessed by all our physicians. Dr. Mary Niles, the lady physician in charge of the female department of the hospital in Canton, reports her obstetric practice for 1892 as follows:

Dead before arrival of physician	5
Forceps deliveries	31
Requiring version	7
Craniotomy	7
Delivery of head left *in utero*	1
Manual assistance	5
Extraction of retained placenta	9
Placenta previa	1
Sundry cases	38

Altogether, 104 cases, in 5 of which mother and child were both dead before the foreign physician was called, and more than 50 of the remainder required operative interference. The instance in which the body was torn away by the native midwife and the head left *in utero*, a like case having occurred to me some years ago, shows how utterly helpless these people are in the presence of difficulty, and to what barbarous treatment the midwives, in their ignorance and desperation, resort. Multiply these figures of one year for one city by the hundreds of cities and thousands of villages, and you get a glimpse of the sufferings which fall to the lot of women in an empire which is without the blessings conferred by rational medicine and surgery. Then multiply the thousands who suffer and die in one year by the years of a century, and the result shows by contrast what an inconceivable amount of good is conferred on the human race by the science and skill of the medical profession of to-day. This simple computation will also give some idea of the humane and philanthropic work in which medical missionaries are engaged, even if there be left out of the count the vast good done by them in removing prejudice and conciliating the people.

In the department of dentistry the Chinese have, strange to relate, anticipated by centuries the profession in Europe and America in the insertion of artificial.

teeth. Utilizing the femur of an ox, and sawing a circle of half or three-quarters of an inch from the shaft, a section of this circle is used sufficient to fill the vacant space in the mouth. The section of the bone is then dressed with a file, so as to imitate the teeth to be replaced, and through holes drilled in each end, copper wires are passed to fasten it to the adjoining teeth. These artificial teeth are designed more for good looks than for purposes of mastication, and as the cost of inserting three or four teeth amounts to about 25 or 30 cents, this means of remedying uncomely defects is within the reach of all.

American and English dentists of high standing have practised their profession in Hong Kong, Shanghai and other cities open to foreign commerce, and have employed Chinese young men to assist in the mechanical part of the work. With the talent for imitation for which the race is noted, these young men have not been slow to avail themselves of the opportunity of learning the more delicate parts of the work performed by the dentist himself. A number of these young men have been successful among their own countrymen, and with foreign instruments and material, are superseding the crude and unsatisfactory work of the native artists. They have not yet attained to skill in the treatment of diseases of the mouth, as this requires scientific knowledge, but that will come in time.

The theory that toothache depends on the presence of worms in the decayed teeth is universally believed, and is demonstrated by a process peculiarly Chinese, and which was investigated some years ago by Dr. Rogers, a dentist of Hong Kong, and myself. The native operator holds back the lips with a wooden spatula while he works around the offending tooth with a pointed instrument until there is a flow of saliva and blood. Adroitly turning the spatula and placing the other end in the mouth, a piece of delicate paper attached to one side is moistened by saliva, and the worms, confined under it, are liberated and become mixed up in the bloody saliva. With a pair of forceps the operator picks them out and satisfies the patient.

Cholera is a disease which is now attracting special attention in the country. It is endemic in India and China, and spreads over these countries from time to time as an epidemic. In China no measures are adopted for the purpose of protecting communities from disease or to prevent the spread of epidemics. The dense population, the want of drainage, the impure water-supply, and the presence of decaying animal and vegetable matter in the streets and canals under tropical heat, afford the best possible conditions for the generation and propagation of cholera. The absence of statistics renders it impossible to say whether the mortality of this disease is greater where preventive hygienic measures are disregarded, but the rise, progress and decline of epidemics seem to follow very much the same course as in countries where the most stringent measures are enforced.

It is a notable fact that the epidemics of cholera in the United States have been introduced only from Europe. This was not strange when there was no steam connection between our western coast and Asiatic ports. During the last eighteen years regular lines of steamers have been carrying many thousands of passengers sailing from Hong Kong and calling at Yokohama. During this time several epidemics of cholera have prevailed in China and Japan, and although steamers have brought passengers from infected districs and called at an infected port, yet the disease has never been introduced by Chinese immigrants. In many instances the steamers have been quarantined because of smallpox, but so far as I know, never because of cholera.

I refer to the subject of fever only to say that yellow fever, the scourge of inter-tropical America, has never been known to occur on the east coast of Asia. Canton is in the same latitude as Havana, and the inter-tropical countries and islands of Asia are much more populous than the Central and South American States and West India Islands. The fact that yellow fever does not prevail is most remarkable, and for this fact that part of the world may well be devoutly thankful.

This brief outline of native and foreign medicine in China is sufficient to show that the populous countries of Asia afford wide fields for research in the various departments of science connected with our profession. To botany and chemistry we look for the development of the resources of the vegetable and mineral kingdoms in those unexplored regions, and from which valuable additions may be made to our armamentarium.

In the study of disease under conditions of climate, sanitary surroundings, and habits so entirely different from those known to the profession in Europe and America we may look for that increase of knowledge which comes from an enlarged view of subjects under investigation.

For the antiquarian, and for those who are interested in the origin and influence of the fanciful theories of disease, and curative agents universally accepted by so large a portion of the human family, the history of native practice in China affords an inexhaustible field of study.

There are at this time about 130 medical missionaries located in various parts of the empire, who study the language of the people and become familiar with their habits and surroundings, and whose duties require them to study their diseases. There are also more than 100 European and American physicians engaged in private practice in the foreign communities of the open ports. Some thirty of these are connected with the Imperial Maritime Customs Service, and are required by the rules of the service to write semi-annual reports of their observations on the diseases of the port where they are located, which are published as Customs Medical Reports.

From all these observers in this new field we may look for valuable additions to our knowledge, but time is required, as the native sources of information are untrustworthy, and all statistics must be gathered under unfavorable circumstances by the observers themselves.

When I went to China, in 1854, but one work on foreign medicine had been prepared in the Chinese language. This was an outline of anatomy and physiology, by Dr. Benjamin Hobson, medical missionary under the auspices of the London Mission. This was succeeded by three other manuals by the same author, on surgery, practice, and obstetrics, and one on natural philosophy. These five volumes were well adapted for introducing the science and practice of medicine, of medicine and surgery, and obstetrics, to the people of that empire, and they attracted the attention of scholars and officials in

high positions. The work on anatomy and physiology was republished, with all the illustrations, in the best style of native art, by an official of high rank, and a complete edition of the five volumes was issued in Japan, and laid the foundation there for the early acceptance of Western medicine by the leading men of that empire.

As much of my time as could be spared from the daily duties of hospital and dispensary work was devoted to translating medical books. To the works of Dr. Hobson have been added a treatise on chemistry, four volumes; one on materia medica, four volumes; surgery, seven volumes; theory and practice, five volumes; physiology, four volumes; diseases of women, five volumes; diseases of the eye, one volume; diseases of the skin, one volume; Gray's *Anatomy* has been translated by Dr. Osgood, an American, and also by Dr. Dudgeon, an English physician, and the *Companion to the British Pharmacopeia* has been translated by Dr. Hunter, and other works are in course of preparation.

We have now text-books on the chief branches of medical science, translated into the Chinese language, which, in its written form, is the same throughout the whole empire, and these books reach the physicians of the most populous nation in the world, and will in time revolutionize the medical practice which is now so highly esteemed because of its antiquity.

Medical classes are formed in connection with many of the missionary hospitals. A medical school has been organized in Hong Kong, under the patronage of British officials and leading merchants in that colony, and the introduction of scientific and rational medicine into China is assured.

While you, in common with the members of the profession throughout this country and Europe, are engaged in earnest labors to increase our knowledge and to add to the means of relieving suffering and prolonging life, the humbler, but not less important, task devolves on us who have devoted our lives to the work of medical missions, of transferring the knowledge which you have accumulated to the languages of Asia and Africa and the Islands of the Sea, and thus of conferring upon vast multitudes of our fellow-men the inestimable blessings, not only of true religion, but of rational and scientific medicine.

CORRESPONDENCE.

VACCINATION AND LEPROSY.

To the Editor of The Medical News,

Sir: Your brief though characteristic review (The News, August 26, 1893, p. 249) of "The Recrudescence of Leprosy and its Causation,"[1] by Mr. William Tebb, F.R.G.S., leads me to venture to send for publication, with your kind permission, the following medically certified cases of leprosy due to vaccination, for which I am indebted to memoranda in the case-book of Dr. Roger S. Chew, of Calcutta:

Mabel P., a Scotch lassie, aged seventeen, a leper for the last eight years, was brought by her mother, who stated that she was vaccinated when she was seven years and a half old. About six months after vaccination, which was successful, symptoms of leprosy began to develop, and she flew here and there to every medical practitioner to save her child, but to no avail, as the disease kept increasing.

Daidas, a native palki-bearer, was a leper twenty years. He was a healthy young man. At twenty-one he was forcibly vaccinated, and a year afterward leprosy commenced at the seat of the vaccine marks.

Jahoorie was a twenty years' leper. Previous to vaccination his history was healthy. When he was seven years old the operation was carried out, and the disease first showed itself six months afterward, commencing as a white patch over the vaccine site. The description of the symptoms of this case is painful and disgusting.

Turning to Dr. R. Hall Bakewell's evidence before the Vaccination Committee of the House of Commons, England, I find testimony, though not certified, that I think quite as convincing, if we desire not the colloquialism of being hair-splitters.

Question 2564, and Dr. Bakewell's answer, are as follows:

Question. Have you had experience of any case in which leprosy has been introduced?

Answer. I have seen several cases in which it seemed to be the only explanation. I have a case now under treatment, of the son of a gentleman from India, who has contracted leprosy, both the parents of English origin. I saw the case of a child last year who, though a creole, of the Island of Trinidad, is born of English parents, and is a leper, and there is no other cause to which it is attributable. Sir Ranald Martin, who is a great authority on these points, agreed with me that leprosy arose from vaccination.

As by the best leprosy authorities in the world the alleged factors for this causation of leprosy, such as heredity, contagion, insanitation, syphilitic cachexia, a fish-diet, malaria, etc., are set at naught, it is worth while to give the names of some of the distinguished men in the domain of dermatology who admit that vaccination is capable of transmitting and aiding the progress of this much-dreaded malady. They are: Sir Erasmus Wilson, Dr. John Hillis, Dr. Liveing, Prof. T. W. Gairdner, Dr. Tilbury Fox, Sir Gavin Milroy, Dr. A. S. Black, Dr. Edward Arning, Prof. H. G. Piffard, Dr. Walter Gibson, Dr. Blane, Dr. Sidney Bourne Swift, Dr. P. Hellat, Prof. Henri Leloir, Dr. S. P. Impey, Dr. H. S. Orme, those already quoted, and others.

The most important cases as to the invaccination of leprosy of my cognizance are those of Prof. Gairdner's adduction, and to be found at pages 139–144 of "The Recrudescence of Leprosy and its Causation," wherein are brought together for the first time some of the most incriminating facts, comprising some 100 pages of closely marshalled testimonies, nearly all medical, and in many cases certified, as to the communication of leprosy by means of vaccination.

In the face of Mr. Tebb's carefully prepared statistics and thorough reasoning, backed up as argument has seldom been backed up before, it would, in my opinion, be the height of insanity to maintain that arm-to-arm (compulsory) vaccination is not to blame as a partial cause of the leprosy revival.

I think you will agree with me that Mr. Tebb deserves,

[1] London: Swan, Sonnenschein & Co.

not the abuse but the thanks, not only of the medical profession but of everybody else.

In anticipation,

Yours faithfully, JOSEPH COLLINSON.

WOLSINGHAM, CO. DURHAM, ENG.

SPONTANEOUS CURE OF A STRANGULATED HERNIA IN A CHINAMAN.

THE following communication has been placed in our hands and is of sufficient interest to be worthy of publication:

DEAR DR. WILLARD: In your lecture on "Complications of Hernia," reported in THE MEDICAL NEWS of April 29th, the remarks concerning nature's method of curing strangulation suggest to me that you may feel interested in a case that I saw about two years ago.

A stout healthy boy of eighteen or nineteen applied for closure of an artificial anus that existed in his scrotum. On examination I found a fistulous opening admitting several fingers, near the most dependent portion of the scrotum on the left side. From this there was a prolapse of four or five inches of small intestine, and odorless fecal matter was oozing. By manipulation the protruding intestine could be returned to the scrotum quite easily, but the size of the hernial tumor could not be appreciably reduced. Where the intestine was adherent to the scrotal skin the dividing line between skin and mucous membrane was scarcely more marked than it is normally at the anus.

The history in brief was that from early childhood there had been a reducible left scrotal hernia. About two years before I saw the patient symptoms of strangulation had developed suddenly, without known cause. The tumor became hard, red, hot, and very painful, and could not be reduced; there was marked constipation and vomiting (neither the boy nor his father remembered whether the vomiting was stercoraceous or not). No treatment was undertaken, and the condition persisted for several days (the patient was not sure of the exact time), growing worse as time passed. At the end of three or four days the tumor burst, discharging some pus and much feces. The pain in the tumor and the sense of constriction at the external ring were relieved at once, and all other symptoms improved rapidly. From that day no fecal matter passed per rectum. The anus was tightly constricted, and the patient refused to allow a rectal examination to be made. By wearing a large suspensory of his own contrivance the boy was able to work about his father's farm. The fistula was evidently low down in the small intestine, as the patient was stout and well nourished, but the feces were without odor.

Respectfully,

DR. GEORGE YARDLEY TAYLOR.

PEKING, CHINA, July 27, 1893.

NEWS ITEMS.

The Eighth International Congress of Hygiene and Demography will be held at Budapest, late in August or early in September, 1894, under the patronage of the Emperor of Austria.

The Biography of Ephraim McDowell.—We are notified by the publishers of *The Biography of Ephraim McDowell* that the book is out of print. Both they and we have received numerous complaints from persons who have paid a supposed agent in advance for the work and have failed to receive it. We advise against any business with a travelling agent, and especially against paying in advance for a copy of the work.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1894, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College, Dr. Charles W. Dulles, on or before May 1, 1894.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelop having on its outside the motto of the paper and within it the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

Mutter Lectures of the College of Physicians.—A series of ten lectures entitled Surgical Pathology and Surgery of the Spinal Cord, the Vertebræ, and the Peripheral Nerves, will be delivered by Dr. De Forest Willard at the Hall of the College of Physicians, Thirteenth and Locust Streets, on Tuesdays at 8.30 P.M., from October 17th to December 19th inclusive. Members of the profession are cordially invited to attend. At the lecture on October 17th the following subjects were considered: Experiments in nerve-suturing; end-to-end suturing; flaps of nerve-substance; interposition of foreign substances; methods of repair: microscopic appearances; primary and secondary suturing; degeneration of divided nerves. On October 24th: Nerve-stretching; pathologic conditions; neurectomy; neurotomy; excision of large nerve-trunks; excision of Meckel's ganglion; nerve-spasm, etc. On the remaining dates the lectures will take up, on October 31st: Neuritis; pathologic degenerations; bruised nerves; gunshot wounds of nerves; traumatism. On November 7th: Fractures and dislocations of vertebræ; primary and secondary degenerations; pathology; results of traumatism; paralyses, etc. On November 14th: Localization-symptoms; pressure-symptoms; pathology; methods of relief, mechanical and surgical; laminectomy. On November 21st: Caries of the vertebræ; pathology of tuberculous processes; deposits about the cord; pressure-paralysis; methods of relief, mechanical and surgical; removal of pus and other deposits. On November 28th: Spina bifida; varieties; removal of contents; removal of sac; syringomyelia; pathology; Morvan's disease. On December 5th: Anterior poliomyelitis; possibility of its infectious origin; epidemic poliomyelitis; surgical measures. On December 12th: Antero-lateral and posterior spinal sclerosis; pathology of the system-degenerations; traumatism a cause; infection; arthropathies; suspension. On December 19th: To be announced.

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ORIGINAL ARTICLES.

RESULTS OF VAGINAL HYSTERECTOMY.

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AN operation must be judged by its results. While in the last few years reports of a large number of cases of vaginal hysterectomy have been published, yet the results recorded have apparently not been sufficiently favorable to convince all surgeons that the operation is comparatively safe and satisfactory. For instance, it is claimed by some excellent gynecologists that in carcinoma of the uterus high amputation is attended with better results, and of course with less danger, than is vaginal extirpation. There can be no question but that in many cases high amputation has been followed by most excellent results. I have recently seen two patients on whom this operation had been performed, seventeen and thirteen years ago respectively, who now have no sign of relapse. In both cases the operator was Dr. T. G. Thomas, and the diagnosis of carcinoma was confirmed by the microscope.

Vaginal hysterectomy, however, as a recognized surgical procedure is of recent date, and while a sufficient number of cases have been recorded for us to form a just estimate of its mortality and of the relative proportion of patients who are well two years after operation, yet we have records of only a comparatively small number of patients who have been followed for five years or longer. It is from this latter class of cases that our conclusions must be drawn as to the proportion of radical cures effected. The dangers of extirpation must of course always be greater than those of high amputation. I think it has already been shown that the results of extirpation are more favorable as regards length of life after operation, than are those of the less radical operation, and as time advances cases are accumulating in favor of hysterectomy, and that in spite of the fact that this operation is done on many patients who would have been declared inoperable were high amputation the only surgical means at our disposal. It is important that all cases should be published, and especially those that have been under observation for a number of years. The longer the list the more nearly correct will be our conclusions. It is difficult to follow hospital cases for many years, yet if operators would take pains to hunt up all patients operated upon four years ago or longer and report on their condition, a comparatively just estimate of the average number of radical cures could be reached. The mortality of the operation may be estimated at about 10 per cent. Winter reckons 8.4 per cent. in 474 operations, and Krukenberg reckons the mortality at 15 per cent. in 243 cases operated on at the Berlin Frauenklinik.

The main object of this paper is to record my personal results. No new methods are recommended and no new instruments are presented. The operations are classed as 1st. For carcinoma; 2d. For prolapse.

FOR CARCINOMA OF THE UTERUS.

All the cases of vaginal hysterectomy that I have ever performed are reported, and they cover a period from August, 1888, to September, 1893. The operations were 16, the deaths none. Fifteen of these patients have been followed; 1 has disappeared from view. Of the 15 who have been kept under observation, there are at the present time (August, 1893) in good health and perfectly free from malignant disease:

Five years after operation	1 patient.
Four " " "	1 "
Two " " "	1 "
One and a half years after operation	1 "
One year " "	2 patients.
Half " "	2 "
Less than three months after operation	4 "

There have died from return of the carcinoma at the end of thirty-three months 1 patient, and at the end of seven months 1 patient. There are alive, but with return of the disease either locally or in other organs, three years after operation 1 patient, one year after operation 1 patient. We thus see that of the 16 patients operated upon 4 have had a return of the disease. Unfortunately this will not be the final ratio, for with the exception of the patients who are in perfect health at the end of five and four years after operation, the cases have not been followed for a sufficiently long time to warrant any decided opinion as to their chances for cure.

I will mention in this connection two other patients with carcinoma of the body of the uterus, who were operated on by the combined vaginal and abdominal methods. One of these cases on whom I operated more than four years ago (fifty months), had a uterus as large as one at a pregnancy of three

and a half months; she is at present in perfect health, with no sign of relapse. The other patient, operated on two and a half years ago, is also in good health, with no trace of malignant disease. Four years at least must elapse before we can even pretend to regard a patient as cured. Indeed a number of relapses have been reported after the expiration of more than four years. I have recently seen a patient who four and a half years after extirpation was apparently free from disease; six months later, however, carcinoma recurred in her pelvis, and she died in another half year. Still such late relapses are uncommon, and if a patient is well at the end of four years we can feel comparatively safe in predicting that there will be no return of the *original* growth.

I have extirpated the uterus for carcinoma by various methods 21 times; at the end of more than four years 3 of these patients and at the end of two years 5 are well and entirely free from return of the disease, so far as can be determined by personal examination. At the end of one year 9 patients are apparently perfectly well.

When extirpation has been possible, I have always chosen this operation in preference to any other. I consider that a case is unsuitable for vaginal hysterectomy if either the broad ligaments or bladder are infiltrated. If a uterus is more than double its normal size, I consider abdominal hysterectomy the safer operation.

Before reporting the history of the vaginal cases I will briefly describe my method of operation. It is unwise, I think, to lay down any special plan, to be followed in every case. The details of the operation must constantly vary, both in the manner of their execution and in their sequence, according to the peculiarities of the case. My general plan, however, is as follows: The patient is placed in the lithotomy-position, with the buttocks elevated on a hard pillow. The vagina, vulva, and neighboring parts are cleansed in the usual surgical manner, and rendered as nearly aseptic as possible. A Sims or a modified Simon speculum is used to draw down the posterior vaginal wall and perineum. If there is any cauliflower-growth from the cervix it is scraped off by the spoon or sharp curet. Any ulcerated surface is cauterized with the Paquelin cautery, after a fresh scrubbing with 1 to 1000 bichlorid solution. The cervix, if any remains, or the edge of the vagina, is seized with vulsellum forceps, and the uterus is dragged downward toward the vulvar orifice. The anterior vaginal wall, with the bladder, is then dissected by scissors from the cervix, the incision being made at least half an inch away from the edge of the neoplasm. The separation of the anterior wall of the uterus from the bladder and vagina, as far laterally as the broad ligaments, is then completed up to the peritoneum, which, as a rule, is not opened at this stage. The posterior vaginal wall is then separated, and the peritoneal cavity freely opened in Douglas's pouch. A finger can now be passed in behind the broad ligaments, and with another finger in front these can be easily palpated, and their exact condition determined. If the edge of the vagina bleeds, the hemorrhage is controlled best by a running catgut suture. The lower part of each broad ligament, (perhaps a fourth of the entire length) is then secured, generally with a ligature, and that part of the ligaments is cut loose from the uterus. This organ will generally then be considerably freed, and can be pulled lower down. The next portion of each ligament is next secured, and cut in a similar manner. Either before or after this the peritoneal cavity is freely opened over the anterior part of the fundus. This can generally be done by tearing with the finger, though sometimes the peritoneum is so tough that a sharp instrument is needed to make the opening. The upper portions of the ligaments are then secured and cut, and the uterus is free. It is sometimes easier at the upper part of the ligaments to tie (or clamp) on one side only, and, cutting the uterus free on this side, drag the organ outside the vulva, where the remaining portion of the ligament can be secured.

After the uterus has been removed, careful inspection is made to ascertain if hemorrhage has ceased. Occasionally a few bleeding points need a catgut ligature, and sometimes the ligatures in the broad ligaments need to be reapplied. If the ovaries and Fallopian tubes appear healthy, they are not disturbed, unless they fall downward into the opening, in which case they are removed. If the adnexa, however, are infiltrated with inflammatory or other material, the ovaries and tubes are removed, and also as much as possible of the ligaments. In most of my cases I have sutured the peritoneum to the cut edge of the vagina. This is done partly to stop the oozing of blood from the cut edge of the vagina and partly to cover up the raw bleeding surface that remains between the vagina and the peritoneum. I think this a good rule to follow, though in the few cases in which this detail has been omitted no harm has resulted. In only a few cases have I closed the peritoneal cavity by sutures. There may be some advantage in this, but I have not found it to be necessary.

The stumps of the broad ligaments are drawn gently downward, and a roll of iodoform-gauze is placed in the opening extending up to the peritoneum, but not inside the cavity. A pad of sterilized gauze is placed over the vulva, and is renewed as often as may be necessary. The iodoform-gauze pad is removed on the fifth or sixth day, and the vagina gently irrigated. The patients, as a rule, are out of bed by the fourteenth

day, often by the ninth. The temperature has in two or three of the patients risen on the fourth or fifth day to 101°, but in the other cases it has never risen above 100°. As a rule very little shock has followed the operation, and but little pain is experienced.

As stated before, the plan sketched is often altered. Sometimes it is easier to begin the separation behind. Sometimes better access can be gained to the broad ligaments by tipping the fundus forward or backward.

Shall the broad ligaments be secured by clamps or by ligatures? As a rule, I prefer ligatures. In most cases they can be applied without much difficulty. In certain cases, however, in which the uterus cannot be drawn freely downward or in which, on account of the patient's condition, it is necessary to adopt the most rapid method, clamps are preferable. The use of clamps is followed, I think, by more pain and perhaps necrosis of more tissue than is the case when ligatures are employed; but these disadvantages may be trivial when compared with the greater safety and rapidity with which clamps can be adjusted in certain cases. The ordinary clamps used in abdominal work, with a long curved biting-surface and short handles, are all that is needed. They are removed at the end of thirty-six or forty-eight hours.

I think, however, that ligatures are to be preferred, and there must be very few cases in which they cannot be applied. I pass them threaded in a full curved, rather short but heavy needle, held in an ordinary needle-holder. In most of my cases I have employed fine silk for ligation of the broad ligaments. I never feel quite secure after the ligation of considerable masses of tissue with catgut, and always think that there is greater liability for the knot to loosen and for portions of the pedicle to draw out. It may be prejudice, but I am always better satisfied when the broad ligaments have been ligated with silk, and as more tissue can be embraced by the ligature fewer are needed, and time is thus saved. I have seen no great disadvantage in the use of silk. In a very few cases (three of sixteen) it has acted as a foreign body, and after the lapse of a few weeks has induced a certain amount of vaginal discharge. If left alone these ligatures would probably have come away of themselves, but it is a very simple matter to introduce a speculum, grasp the ligatures in a pair of forceps, and by a gentle pull they will slip off almost painlessly, and the patient will at once be rid of this petty annoyance. As a rule, however, no inconvenience has been experienced from the use of silk.

It may be of interest to mention that the great majority (80 per cent.) of these operations were performed in the public operating-room of a large general hospital, and the patients were placed in the common ward with the usual variety of cases, septic and aseptic, which a general hospital collects.

Case I.—A multipara, aged forty-nine years, with carcinoma of the cervix extending to the internal os. The operation was performed in August, 1888. A cauliflower-growth was burned off by Paquelin cautery. The broad ligaments were secured by five clamps. No suture of the peritoneum was used. The patient sat up on the fifteenth day. Examined July, 1893, no trace of disease in the pelvis was found, and the general condition was excellent.

Case II.—A multipara, aged fifty-three years, with carcinoma of the cervix, involving the edge of the vagina. Operation was performed in the Cancer Hospital August, 1888. The broad ligaments were secured by six clamps. In September, 1891, there was a return of the carcinoma at the apex of the vagina. Death occurred in June, 1892.

Case III.—A multipara, forty-two years of age, had carcinoma of the fundus, involving the entire uterine body down to the internal os. She was operated upon in 1889 in the Presbyterian Hospital. The broad ligaments were secured by clamps. The patient sat up on the twelfth day. The examination, July, 1893, showed no return of the disease, and the general health was perfect; the body-weight was 225 pounds.

Case IV.—A multipara, aged thirty-nine years, with carcinoma of the cervix. The operation was performed in July, 1890, in the Presbyterian Hospital. The lower part of the broad ligaments was secured by ligatures, the upper part by clamps. In November, 1892, there was a return of the disease. The woman was alive in July, 1893.

Case V.—A married nullipara, aged forty-three years, with carcinoma of the cervix. The operation was performed in April, 1891, in the Presbyterian Hospital. The broad ligaments were secured by clamps and ligatures. The patient sat up on the fourteenth day. Although she has disappeared from observation, she was free from disease three months after the operation.

Case VI.—A multipara, a patient of Dr. W. C. Walser, presented carcinoma of the cervix and posterior wall of vagina, extending downward to the vulva for two and a half inches. The entire thickness of the posterior vaginal wall was infiltrated with the growth, a rounded area two and a half inches in diameter being involved. She was operated upon October, 1891. The uterus was first removed, both ligatures and clamps being used. The entire posterior vaginal wall was then removed, from its upper end to a point just above the posterior commissure. It was more or less adherent to the rectum, and at several points the rectal wall was partly torn, leaving intact the mucous coat alone. A great part of this separation was done while one finger was in the rectum. The patient lost a considerable amount of blood. The operation lasted one and three-quarter hours. The patient rallied well, however, and was out of bed by the twenty-

first day. In July, 1893, she had no sign of return of the disease.

Case VII.—A multipara, thirty-two years of age, with carcinoma of the cervix. The vagina and broad ligaments were apparently free from disease. She was operated upon October, 1891, in the Presbyterian Hospital. Both ligatures and clamps were used. The patient had a rapid convalescence, but the disease returned in four months, and as the woman was desirous of another attempt at cure celiotomy was performed in June, 1891. A carcinomatous mass was removed from the cicatrix at the apex of the vagina, but the intestines were found infiltrated and the pelvic glands involved. No attempt at radical removal of the disease was made. The abdomen was closed and the patient made an uneventful recovery. She died four months later.

Case VIII.—A multipara, forty-seven years of age, with carcinoma of the cervix. The operation was performed in July, 1891. The broad ligaments were tied with silk ligatures. The patient was out of bed on the twelfth day. She was examined in July, 1893, and no sign of a return of the carcinoma was found; her condition was then good.

Case IX.—A multipara, aged forty-nine, had carcinoma of the cervix, and was operated on in July, 1892. The ligatures were examined July, 1893. No return of carcinoma was found and the general health was excellent.

Case X.—A married nullipara, aged fifty-one; carcinoma of the cervix. The operation was performed in July, 1892. Ligatures and clamps were used. The left broad ligament was found to be infiltrated and was in part removed. The patient had always been known as a bleeder, and a great deal of oozing of blood followed the operation, which required a large number of ligatures and suturing. The patient in July, 1893, was in a very low condition from carcinoma of the stomach and other abdominal viscera.

Case XI.—A multipara, aged thirty-nine, who had carcinoma of the cervix. The operation was performed June, 1892. The broad ligaments were secured by ligatures. The patient was examined July, 1893, and no sign of a return of the growth was found, the health being good.

Case XII.—A multipara, forty-two years of age, with carcinoma of the cervix and of the lower half of the uterine body and edge of the vagina. She was operated upon in March, 1893. The broad ligaments were secured by ligatures. The woman sat up on the tenth day, was examined in August, 1893, and no sign of a return of the growth was found. The patient had gained twenty pounds in weight.

Case XIII.—A multipara, aged forty-three, with carcinoma of the cervix and of the lower part of the fundus. The operation was performed in March, 1893. The broad ligaments were secured by ligatures. The patient was examined in August, 1893, and found to be in perfect health, with no trace of the disease.

Case XIV.—A multipara, aged thirty-nine, with carcinoma of the cervix. The operation was performed in the Presbyterian Hospital, August, 1893. The broad ligaments were secured by ligatures (catgut), and the patient was out of bed on the eleventh day.

Case XV.—A multipara, aged forty-two, with carcinoma of the cervix. The operation was performed in August, 1893. The broad ligaments were secured by silk ligatures, and the patient was out of bed on the twelfth day.

Case XVI.—A multipara, aged thirty-nine, with carcinoma of the cervix and edge of the vagina. The operation was performed in August, 1893. The broad ligaments were secured by silk ligatures, and a cylinder of vagina an inch deep was removed from the upper end, and the peritoneum was sutured to the cut edge. The patient was out of bed on the eleventh day.

The foregoing record comprises all of my cases of vaginal extirpation for carcinoma. In certain other cases I have begun the operation with the hope that the entire uterus could be extirpated, but have been forced, on account of the involvement of the bladder or of the broad ligaments, to limit myself to high amputation. While there are a certain number of these cases suitable for abdominal hysterectomy, I have never seen one that, in my opinion, was suitable for sacral hysterectomy. There may be exceptional cases, but my experience with the operation has led me to the conviction that, when a uterus cannot be removed by the vagina or abdomen, it is better to refrain from any radical operation. By sacral operations I mean any of the methods by which the uterus is removed through the back, whether by sacral resection or perineal incisions. The same argument does not apply to carcinoma of the uterus and of the rectum. In excision of the latter organ, even if the disease is not eradicated, the danger of intestinal obstruction will probably be removed. In disease of the uterus no such danger threatens the patient.

FOR PROLAPSE OF THE UTERUS AND VAGINA.

In ordinary cases of prolapse of the uterus, even when complete, the plastic operations usually adopted in such cases (perineorrhaphy and colporrhaphy) are as a rule adequate to effect a cure. In such patients more serious operations, such as vaginal hysterectomy or abdominal hysterorrhaphy, are unjustifiable. There are certain cases, however, of complete prolapse of the uterus and vagina that the minor plastic procedures are utterly inadequate to cure. Such cases are found among working-women, when a large uterus and an enormously hypertrophied vagina hang constantly outside the vulva, and have so hung for many years; the bladder has been dragged completely outside, the rectum has been pulled downward so as to be almost doubled on itself, and the pouches behind and in front of the uterus are filled with intestine, which slips upward and downward according to the position of

the patient. In such patients the vagina has apparently been the main factor in the prolapse, for it is very much lengthened and widened, and its muscular and cellular tissue is enormously increased, the wall being often an inch in thickness. The prolapsed mass may be as large as an adult head, and sometimes is irreducible. Perhaps among private patients who can and will take good care of themselves the combination of perineorrhaphy, colporrhaphy, and Alexander's operation, with the wearing of a pessary afterward, may nearly always render them comfortable. In working-women, however, who neglect themselves and are obliged to lift and carry heavy burdens, such operations are in my experience almost invariably attended by failure. When the patient leaves the hospital a brilliant cure has apparently been effected, and at the end of three months the cure may still persist, but in another three months or in a year the condition of these unfortunate women is generally as bad as before operation. I know that this is a strong statement, and is directly opposed to the reports of some of our prominent gynecologists, men for whose opinion I have the greatest respect, but I simply state my own conviction, and one that has been partly formed from observation of patients who have been operated on by these same surgeons, who maintain that the plastic procedures suffice in every case.

If plastic operations on vagina and perineum will not cure such patients, to what other procedures can we resort? Will vaginal hysterectomy be sufficient, or is abdominal hysterorrhaphy the more satisfactory operation? I consider that either one is justifiable in such conditions. In my experience vaginal hysterectomy *alone* is not sufficient to effect a lasting cure. When reinforced by perineorrhaphy and colporrhaphy it may give satisfactory results in most cases, but extirpation alone, without the aid of the minor procedures, has been followed by failure in nearly all of my cases.

Six patients whose uteri have been extirpated for the cure of aggravated prolapse have come under my observation. Four of them were operated on by myself, the other two by able surgeons of this city. In three of the six the hysterectomy has been reinforced by perineorrhaphy or colporrhaphy. One patient alone has been satisfied with the result obtained. In this case I reinforced the entire posterior vaginal wall and built up the perineum. In two patients the result may be classed as a partial success. In one of these hysterectomy alone was performed; in the other perineorrhaphy was added (both cases were operated on by me.) In three cases the result has been a failure, and the patients are but little better off than they were before operation. At the end of a year, in each patient a larger mass, of the size and character of the original tumor, only minus the uterus, protruded from the vulva. In one of them (operation by the author) hysterectomy alone had been performed; in another perineorrhaphy, and in the third lateral colporrhaphy had been added. In the last case, at the end of eight months, the woman's condition was so wretched that she begged for further operative relief, and in response to her appeal I opened the abdomen (with patient in the Trendelenburg posture) and with considerable difficulty drew the cicatrized apex of the vagina up into the abdominal wound, and in that situation carefully sutured it to the peritoneum and recti muscles, covering it with the external oblique muscle and the skin. At the end of six months the result was highly gratifying; the vagina was still somewhat roomy, but there was no sign of cystocele, rectocele or protrusion outside the vulva. The patient was comfortable and happy.

The result in this patient has been so satisfactory that I have persuaded one of the other cases of failure to undergo the same operation.

A short record of the four cases operated on by myself follows:

Case I was in a married multipara, aged forty-two years, with prolapse that had existed for twelve years. Perineorrhaphy and presumably colporrhaphy had been performed four years previously in one of our city hospitals. The prolapsed mass had been irreducible for six months. It was the size of the crown of an ordinary Derby hat, extending outside the vulva to a length of twelve inches. It measured 19 inches across the circumference. Reduction was impossible, even after two weeks' rest in bed, with ice-bags, etc. She was operated on in July, 1891. The uterus was extirpated, the posterior vaginal wall reduced in size, and a perineorrhaphy added. This patient died a few months after the operation from renal and cardiac disease. The result may be classed as a partial success, though had the woman lived longer it would I think have been classed as a failure.

Case II was in a multipara, thirty-eight years of age, with prolapse that had existed for ten years, and of about the same size as in Case I, but reducible. The uterus was extirpated in July, 1891, and almost the whole of the posterior vaginal wall was removed. The weight of the vaginal tissue was ten ounces. This left a large triangular gap, the edges of which were united, and a high perineum was formed, to partially close the outlet. This patient, at the end of two years, has still a very voluminous vagina, but there is no prolapse, and I consider the result satisfactory.

Case III was in a multipara, aged thirty-nine years, with prolapse for fourteen years, the size of a large cocoanut. Operation was performed in August, 1892. The uterus was extirpated. In six months the patient was as uncomfortable as before the operation, and the case may be classed as a complete failure.

Case IV was in a multipara, aged forty-one years, with prolapse for nine years as large as in Case I. The woman had on two previous occasions sub-

mitted to operations for cure of her trouble. The uterus was extirpated in March, 1893. At the end of five months the prolapse had partially returned, and doubtless will have fully returned in another three months. So convinced is the patient of this that in October she means to re-enter the hospital for an abdominal elytrorrhaphy.

Of the two patients operated on by other surgeons both are dissatisfied with the result of the original operation, and refuse further operative interference on account of the unsatisfactory result following their first attempt.

The details of the operation do not essentially differ from those of hysterectomy for carcinoma, except that the whole procedure is performed outside the vulva. The operation, however, is somewhat tedious and is attended with considerable loss of blood. When the uterus is removed an enormous raw surface remains, consisting of the inner surface of the vagina. This surface continues to bleed persistently, and the bloodvessels seem to have very little contractile power. In spite of numerous ligatures the oozing persists, even after pressure by clamps, sponges, gauze, etc., has been exerted for some time. I do not refer now to the broad ligaments, which of course have been tied in the usual manner, and cause no trouble, but to the free capillary and venous hemorrhage from the spongy surface of the vagina, out of which the uterus has been dissected. I have found that an attempt to stop this by means of ligatures is endless, and that the best means for its control is a continuous catgut suture. A comparatively small area of vagina is dissected off the uterus by scissors, and a needle threaded with fine catgut is carried out and in just under this bleeding surface, and a complete circumsuture of the area is made. Then a further dissection is made and another line of suture, and so on, until the uterus is free. In one of my patients, even by this method, I could not completely stop the hemorrhage, and I was compelled, after wasting considerable time, to fold the vagina inward on itself, bringing one bleeding surface against the other, and there suture them together around the entire circumference. On account of this tendency to bleed the operation is somewhat tedious and should not be practised on weak patients.

It may be that a larger experience may modify my views, but at present it is my judgment that vaginal hysterectomy for the cure of aggravated prolapse is an unsatisfactory procedure, and that, as a rule in such cases, abdominal hysterorrhaphy (hysteropexy) is the preferable operation.

Prof. Küstner, of Dorpat, has been elected to the chair of Obstetrics in the University of Breslau, in succession to Fritsch, who has been called to Bonn.

SOME OF THE THROAT-CONDITIONS OBSERVED IN GOUTY SUBJECTS.[1]

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THE term "gouty subject," as used in this paper, has perhaps a somewhat wider range of meaning than can strictly be ascribed to it, if only those are to be termed gouty who have suffered with articular inflammation, or who exhibit characteristic deposits. In this country, at least, a much larger number of persons suffer with other than articular manifestations of the uric-acid diathesis, their symptoms being varied, and often obscure, until the cause is discovered upon examination of the urine, which shows more or less constantly an excess of urates and uric acid, and often contains calcium oxalate and excess of phosphates. In both classes of patients the upper air-passages are frequently affected, and while the gouty diathesis cannot be affirmed to be the sole cause of the local manifestations, it doubtless acts as both a predisposing and a modifying influence.

Harrison Allen[2] has sharply discriminated between gouty sore-throat and the lithemic throat, and has reported a number of instances of the former condition. He has also given such references to literature as are of value in this connection. I am not inclined, however, possibly because of a more limited experience, to make equally sharp distinction with Allen. Sir Wm. Roberts[3] has well shown the important difference between uric acid gravel and gout, the offending materials in the latter case being deposited in combination as urates in the true interior of the body, while in the former they are deposited as uric acid, on a doubling of the external integuments; yet even he admits that the underlying conditions are virtually the same. Reasoning upon clinical analogy and without direct histologic evidence, it seems to me that cases of the class treated of in this communication occupy what may be termed a middle position; the phenomena depending in large part upon irritation due to offending materials in the circulation, but in less part upon actual deposition in the fibrous tissues.

A large number of cases would have to be recorded in detail by different observers, and a careful analysis made, before characteristic signs of throat-gout could be laid down. Reference should be made to the valuable studies of Hinkle,[4] with whom, however, I

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[1] Read before the Laryngological Section of the Pan-American Medical Congress, September, 1893.

[2] THE MEDICAL NEWS, Philadelphia, June 16, 1888.

[3] Sir Wm. Roberts: On the Chemistry and Therapeutics of Uric Acid Gravel and Gout, p. 56. London, 1892.

[4] Trans. Am. Laryngological Association for 1889, p. 124. N. Y., 1890.

cannot agree in assuming that the cases reported by Ingals as instances of rheumatic sore-throat were of a gouty nature. This paper does not aim to present more than the general results of personal observation, extending over a number of years, but necessarily dealing with a limited number of cases.

The condition, depending as it does upon a permanent error of metabolism, is probably in most, if not in all, instances a chronic one, with a tendency to paroxysmal exacerbation, under the influence of extrinsic or intrinsic exciting causes. Among the most frequent of such exciting causes are exposure to cold or to wet, and indiscretion in diet.

The frequent dependence of chronic sore-throat on diathesis has been recognized by systematic writers. Thus, concerning the causation of "chronic catarrhal sore-throat," J. Solis-Cohen says:[1] "The disease is not usually a sequel of acute sore-throat, but becomes gradually developed without attracting much attention. *It may exist with any diathesis.* Sometimes it is a mere manifestation of disorder in the intestinal tract." And again, concerning treatment, he remarks: "As this affection may coexist with *a variety of diatheses*, the systemic treatment will vary in accordance with the constitutional requirements. *Alkaline laxatives* are usually indicated."

Attention being as a rule first directed to gouty sore-throat during a paroxysm of exacerbation, its diathetic origin may be overlooked; and the case may be mistaken for one of the ordinary forms of acute inflammation. Inflammation, however, is not a necessary feature of the disease, and in my own experience the most prominent symptoms have been sensory; pains and perverted sensations of various kinds being referred to circumscribed regions, often described as "spots," in which no structural alteration adequate to explain the symptoms can be discovered. In one of the most marked cases that has come under my observation, that of a married lady, some forty-five years of age, who is of a gouty family, and has gouty deposits in the finger-joints, the spot most frequently pointed out as the seat of the discomfort is in the left pharyngeal angle just behind the free border of the soft palate. This, however, is not the only location of pain, which is variously described as stinging, burning, pressing, or like that caused by the presence of a foreign body. Sometimes the discomfort is referred to the neighborhood of the epiglottis; sometimes to the side or the base of the tongue; sometimes to several points at once. These spots are often painfully sensitive to the touch, and can thus be accurately localized. The patient has an idiosyncrasy to cocain, and it could not therefore be determined whether or not the application of this drug would abolish the localization of pain.

Similar localization is found in many, but not in all cases, and usually fails when cocain has been applied, though this is not invariable. I have been of the opinion that when sensitiveness persisted after application of cocain the trouble was deep-seated in the fibrous structures.

In some cases pain is referred to a part apparently unrelated with the one touched, but the association is constant, and the impression left upon the mind of the observer is that the error is in the reference, few persons being able to describe accurately the exact seat of a sensation in the throat.

Sometimes, and more especially during an acute paroxysm, visible alterations of structure are manifested at the painful spots. The most usual appearances are the presence of dilated bloodvessels—veins or capillaries, several of which may cross one another at such a spot. Sometimes a single large bloodvessel is found; sometimes there is a dusky coloration of the mucous membrane; sometimes an enlarged and reddened follicle. Often, however, there is no apparent difference from the surrounding membrane, which sometimes presents general congestion, and sometimes nothing out of the ordinary. When congestion exists it may be patchy or uniform. Usually the coloration resembles that of corned beef; sometimes it is dusky red, or even purplish.

In the larynx, the epiglottis and the arytenoid eminences seem the favorite seats of morbid sensation, the former usually exhibiting a network of dilated vessels resembling a veil, the latter a slight tumefaction and reddening. In two cases, in young men, I have seen what appeared to be inflammation limited to the neighborhood of one crico-arytenoid joint. There was pain on respiration and phonation, vaguely referred to this region. I have frequently seen similar appearances at the inception of an attack of acute rheumatic tonsillitis. In some cases there is during the more acute stages a characteristic diffuse laryngitis, much resembling, and perhaps identical with, the form described by J. Solis-Cohen[1] as occurring in young adults addicted to over-feeding and the abuse of condiments.

In these subjects the tongue is red or reddish-brown, thick, puffy, with prominent papillæ, with a somewhat thick coating at the base, extending in streaks toward the tip. The mucous membrane of the pharynx, palate, and palatine folds is relaxed, puffy, and usually congested. The mucous membrane of the larynx, and especially of the arytenoid eminences, and of the ary-epiglottic folds, is similarly puffy, and always congested; the vocal bands

[1] Diseases of the Throat and Nasal Passages. Second edition, p. 178. New York, 1879. Italics are mine.

[1] Op. cit., p. 474.

are pink or red, the color being deepest at their posterior insertions. A pellet of mucus is usually adherent to the meso-arytenoid fold, and as a rule mucus is found in other portions of the larynx as well. The voice is hoarse; the hoarseness is greatest in the morning and after meals. There is a constant desire to clear the throat of mucus; the expectoration is greatest in the morning. The patients often complain of a feeling of fatigue after slight use of the voice. This sensation of tiredness may be referred to the larynx or to the pharynx. The conditions described may pass off in a few days; they may persist for ten days or a week; or they may merge with the chronic symptoms.

In the pharynx, the tonsillar and peri-tonsillar structures and the angles of junction of the posterior and lateral walls have seemed to be most frequently affected. There may be enlarged glands. The tongue and its glands are often involved. The mucous membrane of the tongue or of the cheeks sometimes presents whitish patches of cornified epithelium (leukoplakia buccalis). When the distressing sensations are referred to the rhino-pharynx, Luschka's tonsil may be tumefied and reddened. In young patients the pharynx and larynx are often covered with grayish, tenacious mucus; in those past middle life the pharyngeal and palatal membrane is often dry and pale, exhibiting a network of enlarged and tortuous vessels, or mottled with livid patches.

Relaxation of the palate is common, and in some subjects paroxysms of nasal obtruction, with or without coryza, are met with. This was noticeably the case in a man aged fifty-four years, a neurasthenic, with gouty deposits in the drum-membrane, and in whom at other times nasal respiration was perfectly free; there being no structural deformity that would impede the passage of air. During these paroxysms of obstruction the turbinates would be puffy and pasty-looking; the posterior wall of the pharynx would be apparently bulged forward, and the soft palate would likewise appear puffy and pale. There would be an annoying sensation of a foreign body between the throat and the nose, and efforts at hawking, though ineffectual, would be continually repeated. Examination would not reveal sufficient accumulation of mucus in this region to account for the sensation. In this case the hard and soft palate were occupied almost constantly with a network of large, bluish vessels, which during the paroxysms referred to became still more tortuous and darker in color. Upon one occasion I proposed scarification, but the patient—perhaps wisely—would not consent. In some cases tubal catarrh exists, and sensations of distress are referred to the ear. In a case similar to the one just cited, pain was referred to a point marked externally by pressing the finger just behind the angle of the jaw, whence it radiated into the ear. In a few cases spasmodic choking in swallowing and spasmodic obstruction of respiration, laryngeal and bronchial, have been observed. In one case an attack almost resembling croup was followed by an outbreak of articular gout.

The diagnosis in these cases, while suggested by local appearances and symptoms such as have been described, depends upon recognition of the constitutional condition, and cannot be affirmed in the absence of the ordinary evidences of such constitutional disorder. Urinalysis gives the most important evidence in cases in which there has been no articular inflammation or deposit.

Local treatment is palliative only, and it should be sedative and protective; irritating and stimulating applications are counter-indicated. Astringents may be cautiously employed during paroxysms of exacerbation. For this purpose I have found the glycerole of tannin applied by cotton wad, or a spray of zinc sulpho-carbolate in rose-water (five grains to the ounce), the most useful. Cocain is badly borne by some patients, inducing spasmodic phenomena. When well borne it is useful to relieve pain. Applications of fluid extract or concentrated infusion of coca will at times be feasible and useful in cases in which the alkaloid cannot be employed. I have likewise found aconitine oleate (2 per cent. in oleic acid, freshly made and flavored with oil of almond) a useful analgesic application. Menthol (from 2 to 5 per cent. in liquid petrolatum, as a spray; from 5 to 10 per cent., topically by cotton wad) is occasionally of great service; in some cases, however, it cannot be tolerated. Bromoform (topically by cotton-wad) has given relief in one or two cases in which other applications were inadmissible. In chronic cases solution of iodin and carbolic acid in glycerin (of each one grain to the ounce, with one and one-half grains of potassium iodid to facilitate solution) applied to the spots of painful sensation, or brushed over the entire pharyngeal wall, is of service.

Before making any of these topical applications, whether in acute or chronic cases, the parts should be cleansed by an alkaline and aromatic spray. In quite acute pharyngitis a gargle of hot milk and borax, or of plain hot water, or hot alkaline solution, often gives great relief. Guaiac is likewise of benefit. In acute laryngitis alkaline sprays, followed by the inhalation of the vapor of hot water impregnated with benzoin and paregoric, are useful. For permanent relief, of greater or less degree, dependence must be placed on dietetic, hygienic, and medicinal measures appropriate to the uric acid diathesis. It is unnecessary to detail these here, but I would like to record my favorable experience in this connection with strontium bromid.

ILLUSTRATIVE CASES.

CASE I.—Mrs. L., aged fifty, for some years has had attacks of tingling and sensations as of the presence of dust (hardly intense enough to suggest the presence of a feather) at the left side of the throat. When this feeling is experienced she is forced to cough, and with the cough comes a sensation of strangling. The cough is short, at first sharp, afterward, with the strangling sensation, muffled. There is never any expectoration. The pharyngeal mucous membrane is irregularly reddened and thickened, and there are a number of prominent follicles, surrounded by reddish whorls of dilated vessels. The larynx is diffusely congested, the color being deepest over the arytenoid eminences. There is no mucus in the larynx or pharynx; Luschka's tonsil is reddened and prominent. There is no turbinate engorgement, and though the septum is slightly deflected to the left, nose-breathing is, and has always been, free.

The patient has frequent attacks of shooting pains in the fingers, joints, and about the knees. There are gouty changes in the last joints of the ring and middle fingers of the left hand. For some years she has been compelled to rise at night to urinate. The urine at times is burning.

The patient belongs to a family of good livers, some of whom have had articular gout. She is very stout and has a sallow and flushed complexion.

Urinalysis showed the presence of free uric acid as well as excess of urates and calcium oxalate. The specific gravity was high; no sugar or albumin was found.

A spray of liquid petrolatum, with 5 per cent. of menthol and 2 per cent. of cocain, was prescribed to be used three times a day, and whenever the unpleasant sensations were experienced. The diet was carefully regulated, outdoor exercise directed, and strontium bromid given in doses of thirty grains three times a day before meals. Under this treatment the patient rapidly improved, and up to date (ten months) there has been no return of the paroxysms.

CASE II.—Mr. M., aged fifty-two, of full habit, sallow and flushed complexion, complains of ringing in the ears, of a pain darting from the ear to the throat, and from the throat to the ear, sometimes felt externally behind the angle of the jaw. There is a constant desire to clear the throat, but very little mucus is ejected. The nose feels stuffed up. At times there is a burning sensation referred to a definite spot in the pharynx. The palate is relaxed and covered with a network of bluish vessels. There are a number of enlarged follicles in the pharynx, which is irregularly streaked with red and bluish patches; between these the intervening membrane is quite white. A sensitive spot is found just beneath one of the enlarged follicles on the posterior wall. The patient recognizes this as the seat of the burning. There is considerable tumefaction of the posterior wall of the pharynx toward the lateral angles. The septum is slightly bent, though not sufficiently to obstruct respiration, and the lower and middle turbinates are red and swollen. The tongue is heavily coated, and the papillæ are prominent. Some accumulation of thick, tenacious mucus is seen in the vault of the pharynx. The mouths of the Eustachian tubes are widely open, and the whole structure appears much larger than normal. No mucus is detected in the Eustachian tube, and air enters it freely. The drum-membranes are opaque and show gouty deposits. The patient is a dyspeptic; his urine shows excess of urates, calcium oxalate, no albumin, no sugar.

A spray of menthol and cocain in liquid petrolatum was prescribed, but the strength had to be reduced to 2 per cent. of menthol. The rhinopharynx was wiped clean every morning with a cotton wad saturated with a 2 per cent. solution of cocain. Counter-irritation over the mastoid processes with tincture of iodin was from time to time employed, and iodin, carbolic acid, and glycerin solution applied twice a week by a cotton wad to the nasal passages. Regulation of diet and antilithic treatment internally were kept up. The patient slowly improved and was dismissed from treatment in the course of three months. He had become largely rid of his distressing symptoms, though not altogether of the roaring in the ears. Once in a while he returns for local treatment, which seems to give him relief.

CASE III.—Mr. C. H., aged thirty, a travelling salesman, for a year or more has had frequent attacks of hoarseness, with a feeling of "rawness" in the throat. There is no pain in swallowing. The attacks last about a week. The intervals of freedom vary from a month to six weeks. The present attack has lasted longer than usual—some ten days. There is a slight hacking cough and a desire to clear the throat. There is no trouble in breathing, nasal or otherwise. The tongue is heavily coated, the pharynx congested in streaks, the larynx slightly congested, the epiglottis flaccid, the arytenoid eminences puffy. There is pain referred to the upper part of the chest, but no physical sign of pulmonary lesion. The heart is normal. The patient is a very stout man. He uses tobacco largely, and drinks beer moderately. He is a hearty eater and a gourmet. The urine is 1034 in specific gravity, of acid reaction, and contains urates, uric acid, and calcium oxalate in excess. Diet was regulated. A solution containing strontium bromid and strontium lactate, 15 grains each, was given in water, before meals. The patient was ordered to drink hot water one hour before meals. Zinc sulpho-carbolate spray was applied locally. Relief was reported in four days. There has been no return of discomfort as yet.

Dr. Isaac N. Kerlin, Chief Physician and Superintendent of the Pennsylvania Training School for Feeble-minded Children, at Elwyn, died on October 25, at the age of sixty years, as the result of a cardiac lesion, of which he had been the victim for a number of years. Dr. Kerlin was the Superintendent of the Training School from 1864, having previously been Assistant Superintendent. He was held in the warmest affection by all who knew him, and was generally respected for his professional attainments.

HORNY EPITHELIUM OR SUMMER GRANULATIONS—ITS RELATION TO CONJUNCTIVITIS TRACHOMATOSA; IMPRACTICABILITY OF TREATMENT BY EXPRESSION.[1]

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CONJUNCTIVITIS TRACHOMATOSA is an affection that is characterized by a peculiar roughness, hyperemia, and swelling of the conjunctiva. These changes are sometimes seen as hypertrophied papillæ, again as diffuse excrescences, arranged in rows on the palpebral fold, and from their shape and gelatinous translucency, resembling the spawn of fish or frogs, but of a slightly pinkish or yellowish tint. The appearance of the conjunctiva is much modified by the greater or less development of these excrescences and hypertrophied papillæ. Thus, from a practical point of view, the distinction of several varieties of the disease is essential, as these differences affect not only the course, but also the treatment and the results of the disease. There is fortunately one rare form, which, while being mixed, is not the form commonly described in books as mixed trachoma, as that refers only to its association with the papillary form. The form referred to is a variety associated with a pathologic condition, on which we find but little written, but which is spoken of as horny epithelium, or summer granulations. In this affection the external appearance is much the same as in follicular trachoma. There is a redundancy of the upper lid, with slight ptosis, but on everting the lid we find that the granule is apparently displaced by horny or teat-like elevations. These horny excrescences are not the enlarged papillæ described by authors under the head of "mixed trachoma," in which disease the papillæ sometimes enlarge so as to completely conceal the trachoma-granule by overlapping it.[2] Again, in describing trachoma diffusum Stellwag says:[3] "We have large growths which sometimes project like a cock's comb over the tarsal border." These are enlarged papillæ, not granules. I do not refer to these growths. Clinical observation has shown me that in mixed trachoma the granules are in a minority, the papillæ in all stages of hypertrophy, and that when any of the papillæ have developed as large as these horny elevations, they do not otherwise resemble them, inasmuch as they are isolated and pedunculated, but the horny excrescences are cone-shaped or teat-shaped, and not isolated. Nor do we in the papillary form, with extensive papillary hypertrophy, find as even a development, nor is the arrangement as symmetrical. Their appearance suggests that these elevations are proliferated trachoma-granules due to some action the cause of which is unknown.

Histologically, trachoma is simply an aggregation of leukocytes in the lymph-follicles, which by their increased number push aside the conjunctival tissue, compressing its fibers in such a manner that it has been mistaken for a fibrous capsule or membrana propria. It differs from the follicle in follicular catarrh in being an *active neoplasm subject to change.* The granules may undergo fatty degeneration, and thus be absorbed, or they may be transformed into tough connective tissue.[1] This is not the case in follicular catarrh, these follicles being simply normal lymphoid spaces not subject to change. They are seldom associated with papillary hypertrophy, and never lead to shrinkage of the conjunctiva, to pannus, or any of the distressing sequelæ of the trachoma-granule, and present the type of a disease devoid of danger, frequently getting well without any treatment whatever, and leaving no trace behind.

The true trachoma-granule, as it increases in chronicity, has its leukocytes converted into connective-tissue fibers, which form a true hypertrophic base to each granule, and which we find in all stages of development in any given case of chronic trachoma. It is not only possible but very probable that, due to some peculiar diathesis, non-hygienic measures, or bacterial influences, we have an exaggerated proliferation of these leukocytes into connective-tissue fibers; we have instead of a simple hypertrophic base to each granule a continued hypertrophy, until we have these teat-like or horny excrescences, which are known as horny epithelium or summer granulations. These growths are always associated with the trachoma-granule in some one stage of its development; their pathogenesis is the same; their analogy and association with trachoma suggest them to be a later or hypertrophic stage of that affection, fortunately a rare one, not necessarily following every case, but existing in a certain percentage of cases due to some special existing cause not known, and would be better designated under the head of conjunctivitis trachomatosa hypertrophica.

The subject of trachoma, in any one of its forms, has assumed a new interest in recent years, as we have more effective operative measures, and can now cure in a few sittings what we formerly only relieved after long and varied treatment. The treatment by expression which originated many years ago, and which has been carried out with many different contrivances, has now, since the introduction of Knapp's roller-forceps, become generally adopted

[1] Read before the Pittsburg Academy of Medical Sciences, October 2, 1893.

[2] Fuchs: Text-book of Ophthalmology, 1892, p. 74.

[3] Stellwag on the Eye, p. 402.

[1] Preuss.

as the quickest and most effective one, except for the hypertrophic form just spoken of. This form of trachoma, if we choose to class it as trachoma, is not amenable to treatment by expression, there being nothing to express; the teat-like processes are simply squeezed and bruised by the rollers, and the case is aggravated; and so it is to a certain extent with the papillary form and also the cicatricial form. Infiltration cannot be squeezed out, and where the granules are few and scattered the irritation of the hypertrophied mucous membrane by the *undue* pressure of the rollers will cause a reaction not looked for, and little benefit is derived on account of the enlarged papillæ forcing the rollers over the granule, and not permitting proper expression unless *undue* force be brought to bear on the rollers. It is in cases of this kind that operators failed to recognize the importance of the fact that the amount of pressure brought to bear on the rollers should be lessened in ratio to the amount of existing hypertrophy, and that they should not be used unless granules are present. Because of this fact the desired result was not obtained and the forceps laid aside. I have seen three different operators in as many different cities use the roller-forceps in the papillary form when there were no granules present. These surgeons were necessarily disappointed with the rollers as an operative measure.

The recent series of 114 operations of the various forms of trachoma treated by expression, conducted by Dr. Knapp at the New York Ophthalmic and Aural Institute, in which I participated while his assistant, and which are reported in the January number of the *Archives*, 1892, have shown that the forceps is best adapted to that form of trachoma in which there is something to express, namely, the follicular variety. Of 64 cases of this form, 54 were cured at a single sitting; 8 failed to report, and 1 was afterward operated on by the grattage-method. This case I remember was purposely left for two sittings, as a case operated on the day previously, a little girl, showed a deposit of fibrinous coagulum on the conjunctiva of the lower lid of the left eye, which produced a partial entropium. This was torn up with a squint-hook. Dr. Knapp thought it better to subject the succeeding case to two sittings, as he feared the same result. The patient did not return to have the operation finished, and was afterward operated on by the grattage-method by Dr. Weeks, of New York. I was surprised to hear this case reported at the New York Academy of Medicine some time later, as a relapse of the squeezing-method. In 140 operations I have seen but very few relapses, my first operation, at the Post-Graduate School of Medicine of New York, being one of them. The conjunctiva was profusely studded with granules, but on account of imperfect etherization the granules were not all expressed, to which fact the result may be attributed. To use Dr. Knapp's expression, "the conjunctiva should be milked" with the rollers, applying just sufficient pressure to evacuate the granules, which is very little; the tactile sense alone should be sufficient guide to the operator. It has been asserted in my hearing that one objection to the rollers was that enough pressure could not be brought to bear on them to express the granule, and that the handles were frequently in contact before the desired effect was produced. Such excessive force is an unwarranted procedure, and detrimental to the successful termination of the operation.

It requires less pressure in follicular trachoma, in which the granules are the most profuse, than in any other variety, and most pressure in the mixed form with hypertrophied papillæ; on account of this it is well to treat the latter form with a solution of sulfate of copper for a week or more, until the papillary hypertrophy is considerably lessened, permitting the *granule* to become the more prominent, when it is readily expressed, much less pressure being required.

Dr. Knapp's series of operations has demonstrated the following important facts: First, that the cure of trachoma is not dependent on germicides,[1] the cures resulting from the grattage-method probably being due to the more or less perfect expression of the granule, and not to the incorporation of bichlorid of mercury, to which it is attributed. Secondly, that the granules can be expressed without injury to the conjunctiva; whereas by the grattage-method they are only imperfectly expressed, and then at the expense of mutilation of healthy conjunctiva. Thirdly, that the cure is dependent on the thoroughness of the operation alone.

Too much cannot be said in favor of this recent valuable addition to ophthalmic surgery. By no other means at our command can we so completely eradicate these bodies without injury to the conjunctiva, curing the disease, I may say, in its incipiency, before those many distressing sequelæ appear, which so often destroy vision, and in a very large percentage of cases leave the patient with one or more of those structural changes, as a life-inheritance of a disease over which we previously had but imperfect control. We must on its merits, appreciate the roller-forceps as the operative measure *par excellence* for trachoma folliculaire. Its superiority over the grattage-method is plainly apparent. The inability to completely remove the granule from the fornix and bulbar conjunctiva, and the liability to injure the cornea, during the irregular scrubbing-process, combined with the necessary compulsory

[1] Knapp: Archives, January, 1893.

mutilation of the healthy conjunctiva, in the effort to thoroughly incorporate the bichlorid of mercury into the granule, to say nothing of the frequent relapses and severe reaction, are all well-founded objections to this method. There are no relapses following the squeezing-method, the so-called relapses being simply unfinished operations, due to imperfect expression.

WESTINGHOUSE BUILDING.

PRECISION IN THE DIAGNOSIS OF INTRA-ABDOMINAL DISEASE.[1]

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FIVE cases that I have seen during the last four years may serve as a text for what remarks I have to make on this subject. I will briefly give the clinical histories:

In the summer of 1889 a patient was left in my care by a prominent local physician who was leaving the city for his vacation. He informed me that the man had an aneurism of the abdominal aorta. A few days after his departure I saw the patient and, upon superficial examination, found an oval, strongly-pulsating tumor in the median line of the abdomen. With the idea of aneurism in my mind I must own that I gave comparatively little attention to the patient, who continued to attend to his work, with brief intervals of illness of an indefinite nature. Upon the return of my friend, I handed the case over to him, apparently neither materially better nor worse than when I took charge of it. A few weeks later he told me that he was in some doubt as to the correctness of his former diagnosis, and suggested that we examine the patient thoroughly, with a third physician. This was done and, the patient being placed in the knee-elbow position, the supposed aneurism was easily pulled away from the aorta and the diagnosis of abscess of the liver was made without difficulty. The aspirator drew off several ounces of stinking pus, but in the course of a few days the abscess burst into the lung and death ensued.

In October, 1890, I was consulted by a young man, thirty-five years of age, for persistent hiccough. A careful examination of the abdomen and its contained viscera, by the usual methods, revealed nothing abnormal, and the hiccough was regarded as of nervous origin, and a prescription given for a pill of hyoscyamus and belladonna. I heard nothing more from the patient until March, 1891, when he sent for me again. I found him in another attack of hiccough of three days' duration. He informed me that his former attack had been immediately arrested by the treatment adopted. I accordingly repeated it, but this time without success. Still under the impression that the hiccough was of nervous origin, and deceived by my former success, I ran the gamut of the antispasmodics and like remedies, without avail. Several repeated and careful examinations revealed nothing more than slight tenderness over the liver and a few areas of sensitiveness over the abdomen, the location of which shifted from time to time. At this time the lungs were also carefully examined, with a negative result. The pulse was continually rapid and weak, and this fact, together with a slight but persistent rise of temperature, aroused my suspicions; and after watching the case for about a month, I became satisfied that it was one of tuberculosis of the peritoneum. This diagnosis was soon after corroborated by the involvement of the lungs, and before long it was confirmed by an autopsy.

During the winter of 1891 I was asked by a medical friend to see a patient under his care and give my opinion as to the nature of the affection. I found the case to be one of intra-abdominal disease, characterized by the presence of a long, oval tumor in the median line, midway between the umbilicus and the ensiform appendix. The tumor was very hard and pulsated strongly. The patient's statements were vague and contradictory and there was a complete absence of any symptoms of trouble with the digestive apparatus. The man was well nourished and ate well. As a matter of routine I placed the patient in the knee-elbow position, when I was able to completely isolate the tumor from the aorta and to determine that it was connected with the pyloric end of the stomach. I accordingly told my friend that, in my judgment, he had to deal with a case of carcinoma of the pylorus. He thereupon informed me that the case had been seen by a member of this Society justly renowned for his diagnostic acumen, who had pronounced the case to be one of aneurism of the celiac axis. I replied that time would settle the question. The patient died soon afterward, rather unexpectedly, and the autopsy showed a carcinomatous growth almost completely surrounding the pyloric end of the stomach.

The fourth patient presented a large, doughy, non-pulsating and immovable mass in the right side of the abdomen, between Poupart's ligament and the liver. There was absence of any symptoms relating to the digestive tract and not much pain. My opinion was that there was a malignant growth within the abdomen, probably originating in the mesenteric glands. The autopsy showed a primary carcinoma of the gall-bladder, the large mass being a hematoma caused by the encapsulation of blood effused from an ulcerated bloodvessel.

The prominent characteristic of the last case I shall mention was severe, localized pain extending over a period of six months or more. The pain began in the left side of the abdomen, but finally shifted to the right side and became severe and agonizing, shooting down the right sciatic nerve, and being worse at night. There was at no time absolute elevation of temperature. The pain was intermittent in character and resisted all known anodynes. The urine was several times examined and found to be normal, except for excess of urates, and there were no disturbances of sensation, and no paralysis, or other indication of disease of the spinal

[1] Read before the Medical Society of the District of Columbia at its meeting, October 11, 1893.

cord. There was no discoverable tumor. This man was subjected to many and prolonged examinations by at least six different physicians, each of whom had in his mind the possibility of aneurism, but excluded that disease on account of absence of tumor, pulsation, or bruit. The opinion finally agreed upon was that the man was suffering from the effects of pressure upon the nerves forming the lumbar plexus on the right side, and that the pressure was applied outside the spinal canal. The cause of the pressure was not determined. The autopsy revealed an aneurism of the posterior part of the aorta, just above the celiac axis, with extensive erosion of the bodies of the eleventh and twelfth dorsal vertebræ, death being due to rupture of the sac.

Here are five cases of intra-abdominal disease selected at random, each differing in its nature from the others, and in all of which the diagnosis was more or less obscure.

I had thought my experience with such cases to be particularly unfortunate, but in view of the many like cases constantly being laid before this Society I am encouraged to hope that my own feeling of uncertainty in the diagnosis of intra-abdominal disease is, perhaps, shared by others. It is with this hope that I venture to bring the subject to your attention, trusting that such discussion as my remarks may elicit will tend toward clearing up the obscurity now surrounding it, and possibly enable us to fix upon some criteria of accurate diagnosis.

In the diagnosis of intra-thoracic disease we are greatly aided by instruments of precision and have practically to determine only the nature and not the location of disease. In disease within the abdomen the case is different. Not only is the number of organs and structures many times greater, but we sadly miss the aid of the many mechanical devices that help us in our examination of the thorax and its contents. Many of the organs and structures are deep-seated and all overlap one another to a greater or less extent.

There are two ways of dealing with this subject. The one is to discuss the relative value of each symptom and sign of abdominal disease, and the other is to discuss the different conditions likely to baffle us, and to endeavor to find some indication in each that may be relied upon with some degree of certainty. For the purpose that I have in view the latter seems the preferable plan.

Accordingly, let me first ask your attention to carcinomatous disease of the stomach. This is not an infrequent affection. According to Welch's statistics, primary carcinoma of the stomach forms 21.4 per cent. of all cases of carcinoma. Yet there is no symptom of carcinoma of the stomach that may not be simulated by other forms of disease. The pain, marasmus, vomiting, hemorrhage, and anemia are not pathognomonic. Gastric carcinoma and pernicious anemia have been repeatedly confounded.

It is a well-known fact that in many cases of gastric carcinoma free hydrochloric acid is persistently absent, but it is not so in all instances. The latest investigations of Ewald and other observers show that it is also absent in many other diseases. It seems to be settled that for this acid to be absent there must be destruction of the mucous membrane of the stomach. Provided this membrane remains intact free HCl may be present to the last. We are more justified in excluding carcinoma when HCl is constantly present than we are in affirming the existence of malignant disease when this acid is absent.

The one comparatively certain sign is the presence of a tumor connected with the stomach; yet even here we stray into the region of uncertainty. In the first place, as Osler very truly says, there is very little of the stomach that we can palpate. Allow me to quote the following from his recent work on the *Practice of Medicine:*

> "At least two-thirds of the organ lie in the left hypochondrium beneath the ribs, and so are practically out of reach. . . . Practically in health there is available for diagnosis only a part of the anterior surface of the stomach and the pylorus, which is sometimes, but not always, overlapped by the liver. Tumors limited to the cardia, even when extensive, cannot be felt at all. Tumors involving the fundus, the posterior wall, and the greater part of the lesser curvature cannot be detected, unless very large. Tumors of the pylorus, of the anterior wall, and of a large part of the greater curvature are in inacessible situations."

This opinion will, I am sure, be indorsed by every physician of practical experience. It is worth while remembering that the tumor may be found in the most unexpected localities. In one case it was located just above the symphysis pubis. When a tumor is found we cannot be certain that it is connected with the stomach. It may belong to the left lobe of the liver, the pancreas, the omentum, or to the transverse colon. Not even when we have found our tumor and located it in the stomach can we be certain that it is carcinomatous. A circumscribed induration and thickening from ulcer may deceive us. There are cases of simple, non-carcinomatous hypertrophy of the pylorus, with stenosis, in which diagnosis even after death is impossible without microscopic examination. Finally, there may be cases of carcinoma of the stomach without any tumor at all. These exceptional cases are fortunately very rare. Practically I think that when the symptoms are those of grave disturbance of the functions of the stomach, and in addition thereto we discover the existence of a tumor, we may predicate malignant disease with a fair degree of certainty. There is, however, no one sign or symptom to which we

can pin our faith. Every test must be applied and every resource exhausted. There are many cases of gastric carcinoma in which the diagnosis is unfortunately but too clear. These need not concern us. It is the doubtful cases in which we need light. The diagnosis is to be made not from the presence of any one symptom, but from the coëxistence of several. I desire to emphasize the value of the knee-elbow position, in addition to the dorsal position, in examining for tumors at the pyloric end of the stomach.

Tuberculosis of the peritoneum is a term used advisedly that a distinction may be drawn between it and tuberculous peritonitis. In the latter affection the signs of peritonitis are usually well-marked, while a microscopic examination may be needed to detect the presence of tubercle after death. In the former disease there are few or no signs of peritonitis, yet the autopsy may reveal a peritoneum studded with tubercle. It is of this tuberculosis of the peritoneum that I desire more particularly to speak. It is probably the most latent of all intra-abdominal diseases. In some cases it may not cause a single symptom. In other cases there are vague complaints of dull pain and digestive disturbances. When the disease affects the omentum an ill-defined tumor may be made out by palpation. When one considers that these tumors have led to operations, under the belief that strangulated hernia existed, and that in one-third of the cases in which the abdomen has been opened in this disease the operation was performed for supposed ovarian cyst, the necessity for care is apparent. A somewhat extended experience in this disease has taught me to rely largely on the temperature-record as a guide. Whenever I meet with a case presenting ill defined abdominal symptoms, in which there is a persistent evening rise of temperature, the possibility of tuberculosis of the peritoneum immediately presents itself to my mind. The rise need not be large, perhaps not over a degree or two, but its persistence is suspicious. If with this evening rise there occurs an occasional subnormal morning temperature, the probability becomes almost a certainty. Should the lungs become involved, the diagnosis, of course, becomes clear. But in tuberculous affections it is our duty to make as early a diagnosis as possible if we are to hope for successful results from treatment. In many cases of this disease the abdomen has been opened, usually as a result of an error in diagnosis. But, whatever the motive, the operation has had an undeniably beneficial effect on the tuberculosis, and in a large proportion of the cases has led to a rapid amelioration of the symptoms and even to a cure. To such an extent is this true that I believe we are justified in recommending this operation as a remedial measure in this disease.

Like tuberculosis of the peritoneum, aneurism of the abdominal aorta is an affection in which the earlier the diagnosis is made the more hope we have of success in treatment. Unlike tuberculosis, however, it is here that absence of pyrexia should be a finger-post to successful diagnosis. It is not the plain cases, in which all of the characteristic signs are well marked, that need concern us. It is the cases like the one of which I have given a summary that call for careful examination and thought. What shall guide us in cases when we can detect no tumor, no pulsation, no thrill, and no bruit? I am not prepared to lay down any certain rules, but, judging from my experience in the case outlined, I should consider that pain, persistent and severe, involving any of the nervous plexuses in the abdomen, associated with absence of pyrexia, should lead us to suspect this affection. This, of course, is true, provided there be no discoverable disease of any abdominal viscus and no symptoms of disease of the spinal cord. Gross mentions a sign that may prove of value in detecting aneurisms of the first part of the abdominal aorta, and particularly those situated at the back part of the vessel. It is a murmur, heard by listening over the eleventh and twelfth dorsal vertebræ. It must be remembered that excessive pulsation of the aorta is a common symptom, and, in itself, is no guide at all in the diagnosis of aneurism. Some authorities lay down the rule that a diagnosis of aneurism of the abdominal aorta should not be made unless we find a definite tumor that can be grasped and lifted up, and in which expansile pulsation can be felt. If this is so, then the diagnosis of aneurisms just below the diaphragm, particularly if they involve the back part of the vessel, can never be made, because in these cases none of these tests can be applied.

Hepatic abscess is a symptom of so many diseases that one is hardly justifiable in regarding it as an entity. However, it is often a condition demanding relief, and it may assume more importance than the particular disease that causes it. It is a very insidious affection; in many cases symptoms are completely absent; when they are present they point to the liver as the seat of the disease. They are not characteristic, however, as the dull pain, malaise, jaundice, enlarged liver, and digestive disturbances may be simulated by other affections. In my opinion our main reliance should be placed on the presence of signs of sepsis, such as an irregular and intermittent pyrexia, accompanied by rigors and sweating. When with these symptoms are associated an enlarged liver and a discoverable tumor, we cannot go far astray in pronouncing the case to be one of hepatic abscess, particularly if we are able to find the focus from which the infection starts. In doubtful cases aspiration is warrantable,

and even an exploratory incision. If there be any discharge it should be examined for the *ameba coli*.

The subject of morbid growths within the abdomen is too vast to allow me to take up time in discussing it. The same is true of many other obscure conditions. One of these, movable kidney, which is exciting no little interest at present, has lately been exhaustively set before you. As the object of this paper is rather to furnish a basis for discussion of intra-abdominal disease than to attempt any dogmatic statements thereon, I shall bring it to a close by a few general conclusions that may serve to give direction to whatever discussion may follow.

In the first place it is my opinion that the diagnosis of intra-abdominal disease requires and demands a higher order of skill, knowledge, and acuteness than the diagnosis of any other class of disease. There is no chance here for slipshod work or hurried investigation. Not one, but many and prolonged examinations, must be made. Each and every symptom and sign, however minute and seemingly unimportant, must be noted and weighed. Some cases involve an analysis of nearly all the secretions and excretions of the body. In this connection let me lay stress upon the great value of examinations in the knee-elbow or knee-chest position. It seems to me that one may derive more satisfactory results from this than from any other single aid to diagnosis. I believe that it should form a routine part of all examinations of the abdomen and its contents. The importance of an early diagnosis must be apparent to all. Here, if anywhere, the maxim of the fathers, *obsta principiis*, is of eminent value. The remarkable fatality of these obscure diseases emphasizes the necessity of early diagnosis and treatment. If we wait too long the day for help passes and we are condemned to the painful necessity of seeing our patient slowly die while we must stand by with our hands tied, so far as affording material aid is concerned. In each of the cases forming the basis of this paper the propriety of an exploratory incision was considered. The results showed that it would have been of little avail in any. Within what limits this procedure is justifiable my experience does not qualify me to speak. It would gratify me to have this point discussed and some rules formulated for our guidance.

With this brief sketch I submit these remarks to you for discussion. If any point of value or any aid in diagnosis shall be elicited, I shall be personally grateful. It may be that some of us by reason of greater skill and experience have succeeded in solving the problems that vex the rest of us in this matter. If so, I trust that the Society may have the benefit of their wisdom in order that we may reach more rapidly the goal toward which we are all earnestly pressing—the accurate diagnosis and successful treatment of disease.

CLINICAL MEMORANDA.

CHOLECYSTOTOMY NECESSITATED BY OBSTRUCTION OF THE CYSTIC DUCT.

By GEORGE S. BROWN, M.D.,
of Birmingham, Ala.

P. H. L., white, twenty-five years of age, a contractor, and a strong, hearty man with a splendid personal and family record, has lived all his life out of doors. On July 1, 1893, at 11 P.M., after having eaten a hearty supper, he was awakened from sleep by severe colic in the epigastrium. The usual household remedies failed to give relief, and he suffered all night. At 11 A.M. on the next day I saw him, and at once administered a hypodermatic injection of morphin (½ gr.), and gave him an ounce of castor oil by the mouth. He vomited the oil at once. The vomiting, which soon became bilious in character, continued at frequent intervals all of that afternoon and night; and the pain was so severe as to necessitate repeating the morphin injection about every four hours. At 4 A.M. on July 3d I was hurriedly sent for. I found the man with all of the symptoms of a general peritonitis. His temperature was 103°, his pulse 110; the belly was swollen, hard, and tender; the legs were drawn up, and the face anxious. Vomiting was frequent. A rupture of some kind being suspected, preparation was made for an exploratory incision. By the time our arrangements were completed, however, about two hours later, the pulse and temperature had fallen a little, and the left side of the abdomen seemed not quite so tense. It seemed probable now that the peritonitis would prove to be limited to the right side, and we therefore deferred the exploration.

Although the chances were in favor of the appendix being the seat of trouble, no tumor was discoverable in that region, and the pain and tenderness were greatest in the epigastrium, although the whole right side was tense and sensitive. During the next forty-eight hours the patient was in constant pain, and he was again given morphin (gr. ½) with the needle every four or five hours. He had hiccough now at times, and complete obstipation. All of this time we had been using enemata of every kind without result. The localized peritonitis in the epigastrium was clear enough now, and as he said that he thought he had swallowed some plum-seeds just before his attack began, obstruction from them was considered possible, with appendicitis, some trouble with the gall-bladder, and volvulus.

On the fifth day after the attack began, a little fecal matter came away in the warm-water enema. He was then given one-drop and two-drop doses of croton oil cautiously, until he had taken in all fourteen drops, over a period of two days. All of this moved his bowels very slightly. He was then given ten grains of calomel, which had the desired effect. On the eighth day the pain and fever and tenderness began to subside, and on the tenth day his pulse and temperature were normal, and he had no pain and only slight tenderness.

His diet was limited to peptonized milk, and during the three days in which he had no fever he complained that even a very small quantity of the milk made him

feel unaccountably full. On the night of the thirteenth day, after having taken more of the milk than usual, he had a painful vomiting attack, and the old pain and fever gradually came back. After daily examinations of the hepatic region, a slight fulness of the liver was apparent. The right side was an inch larger than the left, and there was a visible fulness of the intercostal spaces in the axillary line.

On the sixteenth day the obstipation returned. On the eighteenth day the temperature reached 102°. On the seventeenth the temperature remained at 102°, the pulse was 110, and patient was altogether worse. On the eighteenth he was again given ten grains of calomel, with no result. At this time a tumor in the region of the gall-bladder was apparent, and a slight jaundice appeared for the first time.

At 8 A.M. on the twentieth day I cut down on this tumor. It was found to be the transverse colon, the border of the liver, and the gall-bladder, all massed together by inflammatory material, undoubtedly the result of the localized peritonitis of two and a half weeks before. The gall-badder was greatly distended, but was covered in front by the colon. With a little difficullty the adhesions were broken up, and the gall-bladder was exposed.

I now attempted to break through the adhesions sufficiently to palpate the ducts, but on the escape of a little bile, the attempt was abandoned and the torn adhesions were packed with gauze. I now stitched the gall-bladder to the abdominal wall and freely incised it. It contained eight or ten ounces of dark-colored bile. On introducing the irrigator about a tablespoonful of hardened particles was washed away. None of them was hard enough to be called a stone, nor could any stone be found with the forceps. The pouch-like cavity was about five inches deep. The wound was dressed with a strip of gauze for drainage. More of these particles were washed out on the second and third days, and on the fourth day the wound was discharging a large quantity of golden-yellow bile. At this time the jaundice had disappeared, and the pulse and temperature were again normal.

The patient now gained strength very slowly up to the fourteenth day. As he had no fever or pain, and was eating and sleeping well, this slowness seemed to be directly due to the large quantity (at least two pints every twenty-four hours) of the bile he was losing. One or two lumps of the inspissated bile came away on the dressing every day, and an occasional washing brought away more.

On the fourteenth day after operation, he again complained of fulness after eating; his stools became putty-colored, and the amount of bile from the fistula markedly increased. He was put upon full doses of sodium phosphate. The amount of fluid was now very much increased, and very much diluted, so that it was almost colorless; this seemed to be due directly to the sodium phosphate.

On the night of the eighteenth day he had another severe attack of colic, and on the next day the bile again appeared in the stools, and the amount discharged from the fistula very rapidly diminished, so that from that time on the dressings were only slightly stained.

This last attack of pain the patient thought was due to the omission of the sodium phosphate, because the fluid discharged immediately became thicker and less in quantity. And it seems to me that this was a very good explanation, in that it probably allowed a piece of inspissated bile to lodge in the common duct. After this the bile had an uninterrupted flow into the duodenum, and from this on the recovery was rapid. The fistula was entirely closed six weeks after the operation.

I think it most probable that this patient's trouble was caused by a small stone, which first lodged in and then ruptured the cystic duct. Had it been in the hepatic or common duct there could not have been the free flow of bile which he vomited all through the first day and night. After this the inspissated bile which was present in the gall-bladder allowed the bile to enter, but acting as a valve prevented its outflow into the intestine. The escaping stone and a small quantity of the fluid were sufficient cause for the localized inflammation.

I was rendered invaluable advice and assistance in this case by Drs. Cunningham, Wilson, and Thomas D. Parke, of this city.

AN INSTANCE OF SPONTANEOUS HEALING OF AN ULCERATIVE TUBERCULOUS LARYNGITIS.

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ALTHOUGH, since the introduction of the surgical method of Heryng for the treatment of ulcerative tuberculous laryngitis, instances of its cure are becoming more frequent in direct proportion as adoption of the method and its skilled application to suitable cases becomes more general, examples of the spontaneous healing of this kind of laryngeal ulceration have not yet been recorded with sufficient frequency for them to have become commonplace.

The subject of this report presented himself at the throat-department of the University Hospital, August 21, 1893. He had never been examined or received any treatment prior to that date.

The facts of his history pertinent to this report are these: The patient, Samuel H., twenty-five years of age, single, is a baker by trade. There have been no deaths in his immediate family, his parents, two sisters, and a brother, being vigorously healthy. He himself has never been confined to the house a single day by sickness since childhood, having been, up to the beginning of his present illness, particularly well and strong.

With several friends he celebrated the 22d of February, 1892, by getting moderately tipsy, and during the afternoon and evening he did a great deal of shouting and singing. He does not remember that on the next day his voice or throat seemed any the worse for wear, but on the afternoon of the 24th his voice began to fail him and by nightfall had become extinct. The feeblest whisper required much effort and was provocative of considerable pain. There was no cough worth mentioning, nor was there any dyspnea or dysphagia.

With no other treatment than the enforced rest that his throat received, the pain attending attempts at phonation gradually disappeared during the ensuing two weeks, but, coincidentally, the voice failed to reappear.

Shortly after the inception of this throat-trouble the patient began to lose flesh and strength; this has con-

tinued, not rapidly, but without interruption, until now he scales fully forty pounds less than at the date of its commencement. On one of the intensely hot days of July, 1892, he was compelled by an attack of weakness to leave his work, and within an hour or two after reaching his home had quite a sharp hemorrhage, losing probably (allowing a margin for the customary exaggeration) about four ounces of blood. In spite of this alarming incident he returned to his work the next morning, and since that time has had no recurrence of hemorrhage. A slight cough, however, added itself to his other symptoms at this time, remained slight for several months, but since the beginning of the past summer has much increased. With this exception, his further history to the date of his application for treatment is uneventful.

Although it was the throat that was first examined, it may be well to precede the report of the condition of this part by a brief statement of the accompanying pulmonary disease that was investigated immediately afterward. On the right side consolidation was found extending from the apex of the lung to below the second rib. Bronchial breathing was present, but no râles. Below this, beginning on a level with the nipple, was another area of consolidation, over which sub-crepitant râles and other signs of softening were detected. The tubercle-bacillus was abundantly present in the sputum.

The laryngoscopic examination disclosed an epiglottis perfectly normal in everything but color, which was a trifle below the tint of health. The ary-epiglottic folds were equally well-looking, as was also the greater portion of the ventricular bands. A large part of the posterior extremities of these, however, had been destroyed and replaced by cicatricial tissue. Upon the anterior surface of the meso-arytenoid fold a characteristic tuberculous vegetative growth was found.

On both sides only a narrow ragged fringe of the vocal bands remained. Their anterior thirds had been least affected, but even here ulceration had deeply indented their substance, leaving the free margins extremely irregular and the upper surfaces disfigured by welt-like ridges, somewhat resembling exuberant granulations. Posteriorly the bands had been destroyed to their outermost limits; the vocal processes had been unable to resist the progress of the ulceration, and these, too, had melted away.

The examination that disclosed all this destruction failed to reveal the least trace of then-active disease. Cicatrization had occurred wherever the ulcerative process had previously existed, and the probe demonstrated its firmness and maturity. The sloping surfaces of the ventricular bands were uneven at certain points, due, presumably, to isolated foci of infiltration, but these, during the three months that the patient has been under observation, have been perfectly quiescent, no tendency to renewed softening and disintegration having displayed itself.

Success in bringing acute laryngeal tuberculosis to a standstill, even through the most judicious and skilled treatment, is so extremely rare that an instance like this of its spontaneous cure is of more than ordinary interest.

Before dismissing the case it will not be a waste of time to indulge in a moment's speculation as to where the tubercle-bacillus secured its first foothold. Was the disease primary in the larynx or did its establishment in the lung antedate its laryngeal manifestation?

Did the rough usage of the throat eighteen months previously occasion a simple but violent catarrhal laryngitis leading to epithelial erosions; and was it through such breaches in its protective covering that the omnipresent bacillus effected its entrance into the deeper tissues?

Or, on the other hand, was the lung the original site of infection, and was the young man's constitutional vigor such as to hold the disease there in abeyance until the unfortunate excess of February 22d reduced his vitality to such a degree that the hitherto inactive bacilli improved the opportunity to become aggressive, to widen their dominion in the lung, and to subsequently colonize the larynx?

If we recall and group a few of the scattered incidents of his history, I think there will be little hesitation in deciding as to which of these two possibilities is the more probable. The patient and his mother, each of whom has been separately and closely questioned, concur in the statement that the young man enjoyed unimpeachable health up to the date of that fateful little spree. The entire absence of any history of illness preceding the present attack, therefore, lends added significance to the succession of events that have marked its course. These are:

The non-recovery of the voice after the other symptoms of a severe simple catarrhal laryngitis had disappeared; the progressive loss of weight and strength *following* within some weeks the onset of the throat-trouble; the hemorrhage occurring about five months after its commencement, and this followed by the establishment of cough; and, finally, the complete suspension of the tuberculous process in the throat while it insidiously extended its lodgment in the lung, until now it seems upon the point of duplicating there the destruction that attended its earlier occupation of the larynx.

MEDICAL PROGRESS.

Gravidity of Eleven Months' Duration. — Bensinger (*Centralblatt für Gynäkologie*, 1893, No. 35, p. 816) has reported the case of a woman, twenty-seven years old, who had borne two children, six and two years before respectively, after normal pregnancies, without artificial interference and with an uncomplicated puerperium. In May, 1892, she aborted in the second or third month of pregnancy. She menstruated in the week from August 10 to 15. Early in September she noticed signs of pregnancy, and her opinion was confirmed by her attending physician. According to her calculation the pregnancy should have terminated toward the close of May, but it was not until the 12th of July, after a gravidity of eleven months, that labor set in, and was readily terminated without interference. On account of a previous rupture of the perineum, the head encountered no obstruction, but the passage of the shoulders occasioned some difficulty. The placenta was large, the amniotic liquor scanty. The child was twenty-three inches long and weighed more than thirteen pounds, and in all other dimensions corresponded to the prolonged duration of the pregnancy.

Rheumatic Dacryoadenitis.—LAGRANGE (*Annales de la Polyclinique de Bordeaux*, 1893, No. 16, p. 33) has reported the case of a man, twenty-two years old, with a strong personal and family history of rheumatism, in whom there suddenly developed a swelling of the upper lid of the right eye, which was attended with pain and a sense of weight and increased lachrymation. There was also intense pain on the corresponding side of the head. Upon palpation, a hard, ovid body, about as large as an almond, and conveying an impression of being the lachrymal gland, was felt beneath the lid. This was painful to touch, and could be replaced with a little pressure, at once, however, springing forward when the pressure was removed. In view of the history and attendant circumstances, a diagnosis of rheumatic dacryoadenitis was made, and 300 grains of sodium salicylate were prescribed, to be taken in the course of four days, together with a purgative, hot effusions, and rest in bed. At the end of this period the patient was almost entirely well. He was now directed to take sixty grains of sodium salicylate daily, and after the expiration of another four days the cure was complete.

The Apoplectic Pulse is the name given by DANA (*The Post-Graduate*, vol. viii, No. 8, p. 276) to a condition of the radial artery at the wrist, marked by fulness, without great hardness, the vessels generally being dilated and tortuous. Disease of the kidney or heart is not necessarily present, although the latter organ is a little dilated. Thrombosis, with hemiplegia, is a common complication, characterized especially by mental and cerebral disturbances. The pulse is of great amplitude; the pre-dicrotic notch is deep and close to the percussion-wave; the dicrotic notch is deep and the dicrotic wave is short; the total area of the wave is small. The phenomena are essentially due to an impoverished condition of the blood or to some diathetic irritation, such as that of rheumatism, gout, or lithemia, or other condition causing contracted kidneys. The subjects of this condition improve most rapidly upon use of the tincture of ferric chlorid and sodium salicylate. Spartein, strophanthus, or digitalis, given occasionally, will do good. The diet should include vegetables, fruit, a little meat, and a moderate amount of milk.

Sensory Disorders in Diabetes Mellitus.—VERGELY (*Gaz. hebdom. de Méd. et de Chirurg.*, 1893, No. 32, p. 376) reports the results of a study of the sensory disorders encountered in cases of diabetes mellitus, including the record of a half-dozen illustrative cases. He has found that peripheral disorders of sensibility are frequent in diabetics, derangements of the pain-sense and of thermic sensibility being the most common. In some cases thermo-dysesthesia, thermo-hyperesthesia, thermo-anesthesia, and retardation of thermic sensibility are encountered, sometimes in the absence of all other derangement of sensibility. In one case there existed absolute analgesia and thermo-anesthesia.

A Case of Hematidrosis.—HEHIR (*Indian Medical Record*, vol. v, No. 5, p. 151) has reported the case of a girl, sixteen years old, in which the perspiration exhibited a pinkish appearence, suggestive of the presence of blood. The fluid actually oozed from the skin, and on microscopic examination was found to contain blood-corpuscles. The cuticle did not appear abnormal, and the condition seemed to arise from a rupture of the capillaries of the delicate plexus that surrounds the opening of the sweat-ducts. The affection was universal in distribution, but more marked in the axillæ and on the head than elsewhere. Here and there were petechial patches of various hue. There were no signs of hemophilia. Under treatment with iron, ergot and hamamelis internally and a lotion of tannic acid externally the condition disappeared within a week. Six months later the girl still presented petechial spots, but the hematidrosis had not reappeared.

THERAPEUTIC NOTES.

Tetra-ethyl ammonium.—It having been demonstrated in the Edison Laboratory that tetra-ethyl-ammonium is one of the best solvents of uric acid, PETERSON (*New York Medical Journal*, No. 772, p. 320) undertook to establish the dosage of the medicament, with a view to its employment in the treatment of cases of uric-acid calculi, and of gouty and rheumatic conditions. The drug answered admirably in the three cases of acute articular rheumatism in which it was employed. Doses of from 10 to 20 minims of a 10 per cent. solution may safely be administered by the mouth, and of not more than 10 minims of a 1 per cent. solution hypodermatically. Tetra-ethyl-ammonium may be obtained by decomposing its iodid by moist argentic nitrate or its sulfate by baryta. It occurs in deliquescent hair-like needles, and absorbs carbon dioxid from the air. It is strongly alkaline and saponifies fats. It is as bitter as quinine. It has a caustic action upon the epidermis, and an unctuous, alkaline feel when rubbed between the fingers. Its formula is NEt_4OH. It is not decomposed by the galvanic current. It forms numerous salts (sulfate, nitrate, phosfate, carbonate, hydrochlorate, hydrobromate, iodid, bromid), as well as beautiful double salts with gold, platinum, and mercury.

Ammonium Chlorid for Cystitis.—CORRIE (*Virginia Medical Monthly*, vol. xx, No. 6, p. 529) recommends the employment of ammonium chlorid in the treatment of cystitis, primary or secondary. Ordinarily it is directed that a capsule containing five grains of pulverized purified ammonium chlorid be taken three or four times in twenty-four hours, preferably when the stomach is empty, and followed immediately by a half gobletful or a gobletful of pure cold water. The drug has been faithfully tried in a large number of varied conditions with most satisfactory results. In the majority of cases the urine was rapidly cleared of mucus, blood-corpuscles, pus-corpuscles, urates, phosphates, and the distressing symptoms speedily disappeared. In no case did the salt occasion gastric or other disturbance when taken in the manner directed.

For Hemoptysis.—

℞.—Acid. gallic. } . . . āā gr. xx.
Ergotin. }
Aquæ destil. } . . āā ℥j.—M.
Syrup. altheæ }

S.—A teaspoonful every two hours.

BLASCHKO, *Deutsche med. Woch.*, No. 34.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 4, 1893.

THE STRAWBERRY TONGUE.

EVERYONE has heard of, and many have seen, VIRCHOW'S collection of seeds, nuts, eggs, and other natural objects, for the purpose of exhibiting standards of size. Rumor has it that when a similar case was unpacked at the Columbian Exposition it was refused a place, on the ground that it was neither instructive nor amusing. We cannot vouch for the truth of the tale, but can believe it true, because it illustrates an unmistakable and laudable tendency to substitute fixed measures and exact figures for the common comparisons formerly in vogue. It seems too early, nevertheless, to do away with the Berlin samples, for there are still some who will not express size in terms of inches or centimeters when they can do so in terms of millet-seed, hemp-seed, walnuts, tangerines, or goose-eggs. We should go even further than the founder of cellular pathology, and add to the collection some pea-soup, ocher, pipe-clay, strawberries, and other things which it is not necessary to mention now, as standards for some other comparisons frequently made. The strawberries seem especially needed, because though favorite objects for comparison, different men seem to have in their mind's eye fruit in different periods of growth or of different species. This is so true that the owner of any two of the numerous recent text-books on "Practice" runs a chance of getting two very different things compared to a third, viz., a strawberry.

For example, OSLER says of scarlet fever: "The tongue is red at the tip and edges, furred in the centre, and through the white fur are often seen the swollen papillæ, which give the so-called strawberry appearance to the tongue." LYMAN, on the contrary, speaks of a "white fur, which gradually disappears by the fourth or fifth day, leaving the organ red, swollen, and covered with prominent papillæ, somewhat resembling the surface of a strawberry, whence the term strawberry tongue that characterizes this stage of the disease." If the inquirer now thinks to find a judicial and geographic mean in WHITTAKER, he reads that: "The condition of the tongue is peculiar in scarlatina. The tongue is coated white, and studded with red spots, the protruding swollen papillæ, to constitute what is known as the strawberry or mulberry tongue." This may be consoling to the student unless some boyish memory may remind him that mulberries and strawberries are not, after all, quite alike in color or appearance, and in his bewilderment he turns to the translation of STRÜMPELL, to discover that at a certain stage of the disease "the first coating cleans off, and then the tongue usually presents a very characteristic appearance. It is diffusely reddened, and covered with little elevations corresponding to the swollen papillæ (strawberry tongue, scarlatinal tongue)." If, however, in order to complete his search, the student turns to the original, he learns that the word rendered strawberry is really raspberry. He will very probably by this time have so poor an opinion of internal medicine that in despair he will turn to special works on the diseases of childhood, but here again he finds similar divergence. GOODHART opposes ASHBY and WRIGHT, ELLIS contradicts HENOCH, and the well-known celiotomist who in his early days did STEINER into English contradicts the translator of VOGEL. SMITH is Delphic, and does not decide the matter.

If our student now looks up some ancient works on medicine he will find less difference of opinion. WATSON, TANNER, FLINT, BARTHOLOW and many others applied the term strawberry to the red tongue of scarlet fever which occurs at a later stage than the white tongue. This is similar to the usage of the French and German writers, who, however, more frequently use the term raspberry.

Although, of course, part of the confusion de-

pends on the fact that some authors describe the early and some a later stage, such a use of comparisons would less likely take place if the writers had before them a conventional strawberry. It would, of course, be still better to discard the comparisons altogether; but, as we remarked in the beginning, the time for that has not yet come.

It must also be admitted that some who use the term strawberry to describe the white and red tongue defend that use, as one who claimed the comparison arose from the resemblance of the tongue in the early stage of scarlet fever to "strawberries lying in the straw" (*sic*). Another speaks of a "strawberry and cream" tongue, a refinement worthy of severest condemnation.

It can hardly be doubted that the too-ready recourse to the comparison often coincides with a description of the tongue in scarlet fever less full than it should be. Even writers who give the briefest description usually admit that the changes on the tongue are of importance, and while differences such as we have quoted have no effect on the experienced observer, they do lead to confusion and uncertainty on the part of the beginner.

The changes that take place, it is hardly necessary to say here, are, in the first stage, in the beginning of the disease, a white or yellowish "coating" on the tongue, the tip and edges of which, however, are red, and through the coating the prominent papillæ show. This is followed after a few days by a shedding of the epithelium, whereby the tongue becomes red, and it is usually, at the same time, more or less uneven on the surface. Finally, the epithelium being gradually restored, the tongue regains its natural form and color.

In none of the stages is there anything absolutely unique, as any one of them may be observed under other conditions. In regard to comparisons, it would seem to the ordinary observer that the second stage resembles the strawberry (still more the raspberry, however) than the first; but if we must retain the term, let us at least have some uniformity of application. The tendency at present seems rather toward diversity.

In this connection the investigations of NEUMANN (*Deutsches Arch. für klin. Med.*, Bd. 47) are interesting, and should stimulate similar researches. NEUMANN found that the conventional three stages not only can be seen clinically, but that in relative time they often follow the periods given in certain text-books. It is especially interesting to know that in thirty-eight cases of a total of forty-eight the commonly accepted changes occurred. In four cases one of the stages was not strongly marked. In six the typical stages were not present. But in all of these cases there were conditions present that made even the exceptions valuable. Two of the six had severe dyspeptic conditions before the occurrence of scarlet fever. In both of these the tongue remained smooth and shining during the whole course of the disease. Another had septic symptoms from the beginning, and died on the fourth day. The tongue was dry, fissures appearing on the second day, with hemorrhage and sordes. The tip, however, showed the "raspberry" appearance. In the other two cases, both in children, and one just recovered from diphtheria, the tongue remained unaltered.

NEUMANN concludes, and in this he will be joined by all who have investigated the matter, that the so-called scarlatinal tongue is a pretty frequent phenomenon in the disease, and in the majority of the cases in which it is absent complications or previous diseases have in some way altered the epithelium of the tongue.

In regard to the dates on which the "raspberry" tongue appeared, NEUMANN found it once on the second day; 11 times on the 3d; 5 on the 4th; 9 on the 5th; 4 on the 6th; 2 on the 7th; 2 on the 8th; 3 on the 9th; 1 on the 11th—that is, in the majority of cases the tongue became clean and "raspberry"-like between the third and fifth days.

The pronounced raspberry tongue lasted one day in each of 3 cases; two days in 5 cases; three days in 6; four days in 4; and more than four days in 20 cases. In 11 cases it was not present after the seventh day, but in 12 cases it was still present on the fourteenth day, always counting from the beginning of the disease. In other words, the raspberry tongue, or the *red* strawberry tongue of some American writers, in one-third of the cases comes and goes within the first week; in another third it disappears in the second week, and in the remaining third it can be seen in the third week. In 68 per cent. of the cases the raspberry tongue appeared after the fourth day.

Like other observers, NEUMANN found no relation between the severity of the skin-lesions and those in the tongue. That the scarlatinal tongue, in its different stages, is simulated in other diseases, he, of course, admits, though holding that in most cases, by careful observation and consideration of the

sequence of the changes, one can distinguish the scarlatinal tongue from the others.

That the most characteristic stage is the second, or that in which the tongue is clean, red, and more or less like a raspberry or stawberry as to surface, and not the first, or that in which the red papillæ fungiformes show through the whitish coat, makes the tongue less useful as a guide in the early stage of scarlet fever. Careful observation of the tongue, however, is by no means to be neglected for that reason.

THE STAR-SYSTEM IN MEDICAL EDUCATION.

M. ZOLA, of France, has of late been telling us about the advantages of the French system of signed articles over the Teutonic and English methods of anonymity in journalism. The argument has its own excellent *reductio ad absurdum* in the fact of the powerlessness, triviality, and venality of the French press, as compared with the power and dignity of the great journals of English-speaking peoples. It is interesting to note in passing that in an art wherein the French undoubtedly excel not only the English, but also the whole world—the dramatic art—the absolutely opposite plan has been followed, and to this fact may be ascribed the French dramatic success. The system of signed articles in journalism is the exact analogue of the star-system in acting, and anonymity in journalism as certainly conduces to make personality subserve general tendencies, idealism, and logic, as does the method of the *Theatre Français* conduce to a harmonious and powerful presentation of a great drama.

The comparison extends itself spontaneously to the star-system as applied to politics, in which the powerful leader becomes not a spokesman, representative of the people, or legislator for them, but the boss of present-day unsavory prominence; the same trend is shown by the star-preacher whose pernicious selfishness attracts attention to himself rather to the Master or the cause he is supposed to represent.

It is not generally known that the French custom of signing articles is the direct result of a legislative act successfully designed to destroy the influence of the press. In 1850 the MARQUIS DE TINQUEY, addressing the Legislature that acknowledged LOUIS NAPOLEON as President of the Republic, said in reply to objection: "You tell me my plan will mutilate the press, destroy its influence, take from it its individuality? But that is precisely what I want." The French press opposed the measure bitterly, one writer calling it "an infernal machine placed under each newspaper to blow it up and shatter it." But the law was passed, and it was made an offense punishable by a fine of $100 to print an article on politics, philosophy, or religion, without the writer's signature. From that date French journalism declined to its present degradation.

The reason of all this is easy to see: Just as the preacher or priest exists for the cause and the truths he advocates, just as the politician proper should be the spokesman and defender of the people's cause, just as the actor should subordinate his personality and rôle to the dramatic presentation of the whole play, just so must the journalist represent a subordination of his individuality to the advocacy of the public cause or truth of which he is the spokesman.

It is all founded upon the obvious truth that human progress is every day and in every age conditioned upon the rise, the conquering, and the ascendency of one method, or principle, or idea, as opposed to another, either different or opposite, and that individuals must range themselves upon one side or the other. It is the idea or principle that is to prevail or be conquered, not individuals as such. Human genius and heroism consist in catching up the coming truth, the true truth, and being its champion and defender. Human selfishness consists in attracting attention to the individual—preacher, actor, or politician—instead of to the truth.

Precisely the same law holds as to medical journalism, but it also holds in a profounder sense as to medical teaching and medical education. The system of the past represents the plan of signed articles in journalism, or the starring method in acting. But just so fast and so far as medicine becomes a science, just so fast and so far does starring in medicine and in medical teaching become obsolete and out of touch with the times. There is always at least something of the quack about the medical star, and he is the forerunner and the first-cousin of the downright quack, with his newspaper and bulletin-board portraits, and his barnside advertisements. Like the star-actor, the quack, whether in or out of the profession, always manages to get his portrait on exhibition. As if an actor's portrait or that of a doctor could be any guarantee either of histrionic or of therapeutic ability!

In a medical college the thing to be taught is medical science and art, the work to be done is to

drill young men and train them in this science and art. The strength of the typical medical college of the past consisted in having as professors one or several famous physicians, who in didactic lectures and in the clinical amphitheater should play the part of the star-actor two, three, or more hours per week, as if any number of lectures on acting, or as if the fact of being a spectator at good theaters for a year or two, could make one a good actor! It is perfectly well recognized that this idea of medical education and this ideal of the medical teacher is utterly out of date. Indeed, the real medical teacher of the past was not the professor, but was the humble quiz-master or demonstrator. He it was who really taught the student after the star-professor had finished his hour of didactic declamation or amphitheatric pyrotechnics. Laborious laboratory drilling, actual bedside work, the training in actual diagnosis and treatment, the making of urinalyses, blood-countings, the actual management of labor, etc.—such things are to replace the hearing about them and the watching of others as they do them. The hospital must be used by the student and for him, not by and for the professor. *Experientia docet* is an old saw, but we are always forgetting that it is one's own experience that teaches and not that of others.

The star-system of medical instruction and the monopoly it engenders seems also to be arousing the indignation of our colleagues over-sea. From the recent noteworthy inaugural address of PROFESSOR BLACK, of Glasgow, we extract a few paragraphs:

> If there be one thing on earth which should be as free as the winds of heaven, it is the right to impart knowledge, no less than the inalienable right, if a man feels so inclined, to make that knowledge a marketable commodity. Nothing is more tenacious of life, nothing dies harder, than a corrupt and profitable monopoly. It is surely superfluous to argue at this time of the world's history that it should matter little to an intelligent or a discriminating public where or from whom a man receives his knowledge, providing he gives satisfactory evidence of the possession of it. It requires no argument to demonstrate that monopolies of every kind are subversive to the best and highest interests of the people, and that of all monopolies, monopolies of learning are the most wicked and the most indefensible.
>
> If the laborers are numerous then we have the usual effects of competition—industry, dexterity, and moderate wages. If, on the contrary, the laborers are few in number, then we have, as usual, carelessness, bad work, insolence, and exorbitant demands. And these evils attain their maximum when, as in the Scotch universities, there is only one laborer, and can be no more. Mental labor is, therefore, subject to the same laws as labor of every other kind, and it is surely alike entitled to the protection of the laws. There is surely no more oppression in prohibiting a man from exerting his thews and sinews in an honest calling than in prohibiting him from using the powers of his mind that he may derive an honest profit from the exercise of them. But, say the professors, the magnitude of our classes proves to a demonstration that we are the most capable teachers. "One might just as well say," remarks ANDREW BUCHANAN, "if there were but one ferry-boat between Dover and Calais, or between Portpatrick and Donaghadee, that the excellence of the boat was demonstrated by the number of the passengers, or that there is any connection between Tenterden Steeple and Goodwin Sands." For my part, I think that the price of oatmeal in Scotland and the right possessed by the universities to confer degrees are the main factors in the proliferation of these hypertrophied classes.

From a multitude of reasons, therefore, it is seen that the organized and vivified medical college is to take the place of the cluster of individual medical star-professors of the past—that personalities are to be subordinated to a system, leading rôles to be merged into a harmonious unity, men into an institution. A great work is to be done, a work requiring a large number of specialized workers, each performing his peculiar function, each the equal of the other, and all running to a unity of result that leaves no place for exaggerating one or two rôles, whilst extinguishing all others. It is clear, therefore, that the college which soonest and best meets the new ideal will be the college of the future, and the college that clings to the methods of the past, seeking a few leading actors and cruelly silencing subordinates—with necessarily resulting jealousies and self-seekings—must assuredly go down. Such a college as this last inevitably becomes ring-ruled, the financial aspect ever uppermost, never willingly lengthening the course or raising the entrance-standard.

All of this looks to the motives and methods of government of medical colleges being taken from the hands of the student and of the proprietary owners and being put into the hands of the profession as a whole. Neither student nor teacher-owner can be expected to raise standards, lengthen courses, diversify and deepen instruction, making it all practical and thorough instead of theoretic and superficial. The profession should give its opinion by resolute resolution through its associations and congresses, both local and general. It is the physician who for years has seen the deplorable results, both in himself and in others, of inexact, unpractical, and insufficient education, who is capable of speaking a true and a decisive word. It is his affair moreover, and his profession, that is at stake. His society com-

mittee of investigation, his society resolution of commendation or condemnation can give a needed word of encouragement to colleges moving in the right direction or haul up sharply those that are the real enemies of professional progress and dignity.

This new tendency, nay, this coming and pressing necessity, does not in the least extinguish individuality, but leads to its healthy development. It was the old plan that with ruthless barbarity throttled all individuality except the egregiously selfish individuality of the star, and that smothered nascent ambition and possible teaching-ability in order not to permit rivalry. The new plan, with its enormous increase in numbers of the teaching body of a college, encourages the healthy growth of individuality and of special ability. But it does one other most important thing: it reduces to useful subordination all egotistic advertisers and self-seekers, and binds individualities together for a work and a system that outlasts and is of more importance than individuals.

EDITORIAL COMMENTS.

The Care of Our Lepers.—In a paper read before the recent World's Public Health Congress, Dr. Benjamin Lee, secretary of the State Board of Health of Pennsylvania, stated that cases of leprosy are under observation in the following States and Provinces: New Brunswick, twenty-two cases; British Columbia, seven cases; New York, six cases; Pennsylvania, four cases; Illinois, two cases; Iowa, one case; Minnesota, seven cases; Wisconsin, four cases; Louisiana, forty cases; California, twenty-four cases, making in all one hundred and seventeen cases.

At the well-known Lazaretto at Tracadie, in the Province of New Brunswick, provision is made for the comfort, care, and treatment of lepers in a manner in harmony with the dictates of humanity and the requirements of modern science, while, at the same time, they cease to jeopardize the health and happiness of others. The United States has only gone so far as to make the affection quarantinable at the seacoast, and to order those on arriving vessels found suffering from it to be at once returned to the ports from which they came. In the different States of the Union the widest diversity prevails, both in theory and practice. The only place in which segregation is practised, and at the same time humane provision is made for the shelter, maintenance, medica attendance, and nursing of lepers, is the City of Philadelphia.

While the number of lepers is small, no rural community, very few States even, feels justified in going to the expense of establishing a lazar-house or colony. Dr. Lee asks: Is it wise to wait until State after State finds itself compelled by the increasing number of lepers to take this step, or is it not rather the duty of the central government to gather them all into one properly supervised community, where they can have the companionship of their fellows, the comforts of a thoroughly furnished home, and the advantages of the best medical and surgical skill?

He further adds that in determining the importance of this question and the necessity for governmental interference, the numerical method is entirely misleading. One case of leprosy outweights a hundred of any other disease. If there were but ten lepers in the land instead of more than ten times ten, it would be equally the duty of Congress to initiate measures to prevent, if possible, a single addition to the number.

"Special" Press Reports.—The venality of the ordinary newspaper is becoming more and more disgusting. When a scamp wishes to gull the community with his quack nostrum the "business" is carried out as follows: First he gets the degree of M.D.—a very easy thing. Second, he gets enough money to buy the services of the agent of one or many newspapers, and has him to supply his so-called newspapers with puffs and lies as to his "cure." Each "despatch" must be cunningly worded—a good literary hack, or street-car-sign poet can now be had for a thousand a year—and the supply kept up regularly, and from all parts of the country. There is not the least doubt about the moral newspaper publishing the highly important special despatches. Every other paper contains them. Here are two samples which the *Cincinnati Lancet-Clinic* says were printed in advance and sent to three hundred newspapers:

Special to the ———.

PHILADELPHIA, Oct. 18.—The County Medical Society's petition to the Board of Health to isolate consumptives has increased their fears, occasioned by startling head-lines in a local paper declaring the disease infectious. The State Legislature of Michigan recently indorsed this view, as did the Medical Congress in Washington, and deaths from consumption having decreased everywhere recently, Dr. Flick, with a few others, ascribes this to isolation. The majority of medical experts, however, credit it to the free, broadcast distribution through physicians of test outfits of the ——— treatment, by which authentic cures are reported daily in the medical and secular press.

MINNEAPOLIS, Oct. 18.—Recent local editorials condemning the medical code while commending ———, the ——— scientist, for withholding his consumption-cure formula, are exciting much discussion in medical circles. The *Times* said: "His discovery greatly assists the fight against this enemy of human life, and thirty or more local physicians say that the medicine accomplishes more than his claim."

The *Journal* said: "It is one of the most valuable and wonderful discoveries ever hoped for in medical science, and the formula is not given to every Tom, Dick, and Harry to monkey with, and is preserved from the tampering of fool empiricists."

Castration for Prostatic Hypertrophy.—In view of the dangers and the troublesomeness of prostatic enlargement, together with the uncertainty of the results of treatment, the surgeon would hail with delight some safe measure that would promise reasonable hope of permanent success in the treatment of an unavoidable condition. In a paper read before the last meeting of the American Surgical Association, J. WILLIAM WHITE (see THE NEWS, June 10, 1893, p. 636) pointed out the analogy between the prostate gland and the uterus, and the hyper-

trophy of the former and the fibromata of the latter. He also detailed experiments demonstrating that orchectomy in dogs is followed by a reduction in the size and weight of the prostate. The practical outcome of these observations resides in the treatment of prostatic hypertrophy by castration. The same line of thought has been followed, and similar experiments have been undertaken by an independent observer, Rocum (*Centralblatt für Chirurgie*, No. 35, 1893, p. 759), of Christiania, Norway, who has reached identical results. This observer, however, has gone a step further, for in a preliminary communication he reports two cases of prostatic hypertrophy in which he removed the testicles with most satisfactory results.

Slips of Medical Editors.—Our contemporary, the *Medical Record*, in an editorial, August 26th, criticises sharply and justly the carelessness of other medical journals in regard to prescriptions, at the same time modestly disclaiming any disposition to assume for the editor of the *Record* superiority in proof-reading. The disclaimer is as timely as the reproof; for in the next issue we find a prescription with about as many faults of style, grammar, spelling, and capitalization, as could be expected in one effort. Here it is:

℞.—Tr. ferri chlor.	. . . . .	℥ss.
Spts. minderus	. . . . .	℥jss.
Glycerine	. . . . .	℥j.
Tr. aconitia	. . . . .	℥ss.
Aq. font	. . . . q. s. ad	℥viij.

Here we have a man's name spelled wrong, and without a capital; a nominative for a genitive; an English word for a Latin one; a tincture of an alkaloid (an absurdity) with a nominative again for a genitive; and all the liquids ordered by weight, when there can be no doubt the prescriber intends fluid measure.

The modesty of our contemporary compels gentleness in pointing out these slips, and evokes the kindly wish that none more serious may ever mar its broad and fair pages.

Facilis Descensus Averno.—One of our subscribers received the following letter from an "Imitation Gold-Cure," which we reproduce *verbatim*:

Dear Sir: Enclosed please find our circular for the cure of Liquor Opium Morphin and Tobacco Habits. we are prepared to send the cure to Dr's and would like to have you handle our cure in your county we furnish the cure at $10.00 per patient with full instruction to Dr will come and help you start a branch cure if you desire to take hold of cure we have several patients from your vicinity one at Austin Lanesboro Rushford Whalen and La Crosse. you might get the services of a Keeley Cure Graduate and do a nice business this Winter hoping this will meet with your aproval I remain Resp yours —— ——

The Right of a Wife to Pay for her own Medical Treatment and Recover therefor.—It is the duty of the husband to support and maintain his wife, and to furnish medical treatment and care in the case of injury or ailment, and presumptively all such damages accrue to him when an action is brought to recover on account of a personal injury to the wife. But the Appellate Court of Indiana says, in the case of Board of Commissioners *v.* Castetter, just reported (34 N. E. Rep. 687), that this is but a naked presumption, and when it is averred and proved that the wife has expended or incurred a liability on her own account, she is entitled to recover therefor as if she were sole in a State where she can maintain in her own right an action to recover for the personal injury making such medical treatment and care necessary.

Pseudo-cerebro-spinal Sclerosis.—The vagaries of the malarial poison are admirably illustrated in a case reported by Triantaphyllides (*Archives de Neurologie*, September, 1893, p. 232), which presented many of the classic symptoms of cerebro-spinal sclerosis; slow, scanning speech; intention-tremor; nystagmus; exaggerated tendon-reflexes. There was also a tendency to epileptiform seizures. There was, however, a history of intermittent fever, and the spleen and liver were enlarged, while the blood contained hematozoa; recovery ensued upon the internal and subcutaneous administration of generous doses of quinine. The case is particularly interesting and important in view of the fact that organic disease of the central nervous system has been observed as a complication or sequel of malarial infection.

Cremation and the Use of the Cremating Furnace in France.—The thrifty Parisians are proverbially expert in money-saving devices. While cremation is slowly progressing in popularity (49 cases in 1889, 159 in 1892) they utilize the cremation-furnace of Père Lachaise to dispose of the anatomic remains of the hospitals and dissection-rooms. This is much more economic than burial. During the last four years there have been no fewer than 111,852 incinerations of anatomic remains at Père Lachaise. Each parcel represents a human body when the doctors and students have done with it. To this end 27,000 persons annually come to the city of Paris. All of them are supposed to be friendless, because their bodies are not claimed.

Keeley withdraws his Libel-suits.—The libel-suits instituted by Keeley against the *Medical Press and Circular* and the *Lancet* have been voluntarily withdrawn, the costs of the respective proceedings being paid by the plaintiff. The reason given by the solicitor was that the demands upon the plaintiff's time and attention are so great that he finds it impossible to go to England. The courage of the two English newspapers is a lesson to American publishers and editors. The mere whisper of the word libel is often enough to make them run to hole as if no principle were at stake, and as if the whole medical profession were of less value than a nostrum-vender's profits.

SELECTIONS.

"GREATER LOVE HATH NO MAN THAN THIS."

The Greeks made their gods simply themselves, with all their potentialities glorified into certitudes, as if to demonstrate what a Greek could be at his finest and best. The hero was merged into the god. The world has ever been quick to recognize valor, delights in brave exploits, exults in signal instances of moral courage, and makes haste to raise monuments to its heroes. Humanity

loves to see itself at its best. Our rich inheritance from the ages in stories of daring on the battle-field, or heroism on the quarter-deck, has, perhaps, blinded our eyes to the silent, single-handed combats where there is no enthusiasm of numbers, no excitement of banners and drums, no shout of victory. And perhaps among the glorious company of heroes unchronicled and martyrs unsung, no profession holds so large a place as that of medicine.

The physician knows that a foe as deadly as a bullet and far more insidious lurks in the micröorganism. But undaunted, high-hearted, strong in his professional loyalty, he takes the risk which personal contact involves, with no thought but wresting his patient from the grasp of death. But the world too often fails to see that thus the doctor merges into the hero.

Every physician knows many instances in which his professional comrades have fallen by his side, struck down by infectious fevers or septic absorption acquired at the bedside of a patient. Notable instances have recently brought this peril afresh to our minds. A contemporary journal, in the last issue, records the death of a practising physician who caught the infection of yellow fever from a patient whom he was attending, and also the death of a promising young doctor to whom the infection of typhoid fever was communicated from a child-patient at the New York Hospital. Last week it was our melancholy duty to report the death of a brilliant young physician, of unusual qualities of mind and heart who caught diphtheria at the Boston City Hospital.

On another page of this week's issue will be found the resolutions passed by the Visiting Staff of the hospital upon his death. In another editorial column of this week's issue also are references to several deaths from disease contracted in the discharge of duty among medical officers in the Marine-Hospital Service.

It will be observed that the personal risk is greatest to the hospital physician, not only on account of the large number of patients and variety of diseases which come under his care, but because the most malignant and extreme cases are naturally aggregated within hospital walls. It must be remembered that the physician and surgeon runs his greatest risk in that part of his calling where his skill and services are bestowed gratuitously.

Every call for medical aid in great epidemics has always brought a swift response of willing hearts and ready hands. Physicians have set aside all personal comfort, and gone to the unpleasant surroundings of loathsome disease, doing not only the work of nurse but even of household drudge, because all others had fled in terror from the dead and dying. Self-sacrifice is, after all, the real essence of heroism. The great scourges, formerly regarded as dispensations of Divine wrath, but now known to be the results of sanitary pollution, are yet full of imminent peril to the practitioner. The very scientific knowledge which helps him more intelligently to combat disease has also revealed the extreme subtlety of his invisible foe, and made clearer his hazardous calling. But increase of knowledge brings no shrinking to the physician. He puts fear under his feet, and walks serenely on in the path of his self-appointed duty. Carlyle says of the hero, "Now and always, the completeness of his victory over fear will determine how much of a man he is."

To the unthinking, the surgeon at the operating-table or the physician in the wards for infectious diseases is only a man pursuing his profession. But under the impassive exterior will be found "the stuff of which martyrs are made." He holds his life none too precious to be sacrificed, if need be, in relieving humanity's physical suffering, and surely "greater love hath no man than this, that a man lay down his life for his friend."—*Boston Medical and Surgical Journal.*

HARD TIMES AND FREE MEDICINE.

From every part of this great and rich country the news comes to us of extreme stringency in the financial position of our *confrères*, the general practitioners. Never was there a richer opportunity for the masses to play the pauper than now. The present panicky state of the money-market affords people an immense excuse for wholesale imposition on the profession. The conditions of the times will not give them free bread, free clothes, free transportation on the railroads, or rent free, but they hie away to many of our too numerous hospitals and dispensaries for free treatment—advice, medicine, and all included for nothing, or for "ten cents," the figure fixed in certain palatial infirmaries.

The consequence of all this has been most demoralizing to the profession and the public. Practitioners reduced to a state of enforced idleness and grim want are forced either to quit their profession altogether, or to "meet *steal* with steel," to open rival dispensaries, to advertise, or to drift into downright quackery.

Many cases have come to our knowledge which go to prove that the practice in vogue in many of our largest dispensaries is a species of downright robbery, and tends to work incalculable harm to the profession. Case after case is taken from among people of ample means and turned over to the hospital or to the college professor for his clinic, without a word being asked as to their mendicity or ability to pay anything at all. Cheap railroad excursion rates drain the outlying villages for miles in every direction.

This hydra-headed monster of indiscriminate free treatment must be seized and strangled, or we will soon see the profession of medicine dragged in the dust; open downright quackery will be rampant, and integrity and honor in the healing art will be things of the past.

By no means let us withhold our services to the poor and deserving, for humanity compels us to gratuitously attend those without means. Nor let us strip the field of such clinical material as legitimately belongs to the teacher, but let the teacher not forget that he has no prescriptive right to filch from the struggling practitioner what justly belongs to *him.—Medical and Surgical Reporter.*

CORRESPONDENCE.

THE HUMOR OF PHYSICIANS.

To the Editor of The Medical News,

Sir: An editorial in a recent number of The News (August 3d) noted "a certain absence of humor in medical men," and recounted some interesting instances to establish the thesis. The subject might be enlarged

upon and illustrated by some observations upon the late Pan-American Medical Congress, whereby it may appear that what at first seems to be an absence of humor is really its very quintessence, the gravity of the actors and the apparent unconsciousness of their own humor being so marked that one can scarce help interpreting them literally.

When upon the eve of the opening of the Congress, the foreign delegation was entertained at the National Theater, seeing Seabrooke in the Isle of Champagne, its sense of humor was aroused to a high pitch by the simple incongruity of a living king entombed with his departed queen, holding his sides and rolling over in convulsions of laughter at his own resurrected jokes; but at other times and in more serious places our guests were surprised by humor not only unlooked for, apparently unconscious, but tinctured with a spice of inconsistency that reminds one of a certain dominie who figured in the annals of the Mohawk Valley some years ago, and who was brought to book for his habit of exaggeration. He said: "Brethren, I confess that this is my besetting sin; it deserves condemnation, and I have shed hogsheads of tears over it."

The incident about the registration of Mr. Ernest Hart at his hotel, for which he has been criticised, ought not to be regarded too seriously. Doctors were registering by the scores, most of them not affixing any sign to their names to distinguish them from the vulgar crowd, even the president of the Congress subscribing himself as plain "Wm. Pepper, Philadelphia." To be sure some English physicians observe the same practice, but it is presumably opposed to the spirit of the British Code of Medical Ethics. It was Mr. Hart's opportunity, as the great exemplar of that venerable document, to give an object-lesson in medical ethics, while at the same time being mindful of his peculiar position as guest of the Congress. The delicate humor with which the registering officials were criticised is evident in the contrasting "formal" registration of "Ernest Hart, F.R.C.S., D.C.L., London, England, editor *British Medical Journal*, Dean of St. Mary's Hospital." It may now be considered settled that upon such occasions not only is a titular registration professional, but likewise according to the Code. It does not follow that it is proper to emblazon one's cards, letterheads, the directories and doorways with a labored enumeration of all hospital and journal connections. That is simply carrying the joke too far.

The humor sometimes assumed a fantastic type, as when the official guest appeared to ignore common parliamentary rules and jocosely directed the presiding officer in the discharge of his duties. This type of humor is frequently met with in frontier settlements where laws are lax, and is not unknown even in such a deliberative body as the House of Commons, and not easily restrained by rigid codes of procedure, as was shown during the recent debate upon the Home Rule bill, when the dignity of parliamentary law gave way to the humor of the Donnybrook Code.

In the Section of Children's Diseases, the paper of Dr. J. Lewis Smith, upon "Diphtheria," had an allusion to the use of a proprietary remedy that was suggested probably by papayotin. Dr. Jacobi, of the New York State Medical Society, that heretic organization that knows no code, stated that he did not countenance the use of a remedy the composition of which he was ignorant of; and Dr. Love, of St. Louis, secretary of the Association of Medical Editors, and a prominent member of the American Medical Association that ostracized Dr. Jacobi's State Society for its ethical heresies, defended the use of any and all remedies, from whatever source under whatsoever names. The apparent inconsistency that would indicate that a member of the Medical Society of the State of New York could under any circumstances be observant of sound principles of pharmacy, or that a member of the American Medical Association could violate its sacred Code of Ethics, disappears when viewed from the humorous standpoint. Syllogistic reasoning cuts the very soul out of humor, and a too logical mind never appreciates a joke.

In this city recently a whiskey and opium cure was started and some members of the New York State Medical Society (no code) were asked to assume its management, possibly because the Society in some quarters had been advertised as a pariah among medical associations, and was supposed to engender and monopolize all of the quacks and everything of quackery. Failing in this direction, they finally persuaded a capable and promising recent graduate to take charge of the institution. He had, however, some compunction of conscience about the matter, but was advised by a member of the New York State Medical Association (old code) to accept it, and so he did. The humor of the situation followed at the next district meeting of the Association when one of the members read a paper deploring the decadence of medical ethics, charging members with violations of the Code, and appealing to the Association to stand by its declaration of principles. The Puritan, with his profession of holy inspiration and fervid zeal, when persecuting Baptists and Quakers, never realized that there was any humor presented so grimly by his inconsistency. Truly, Mr. Editor, there *is* humor of the deepest dye among physicians, when you observe their whims and warps and wrinkles, that not all codes, human or divine, have been able to eradicate. With Touchstone, this "rumination wraps me in a most humorous sadness."

Charles Stover.

Amsterdam, N. Y.

"INDIAN FIRE."

To the Editor of The Medical News,

Sir: My attention was first called to this disease late last summer, and being unable to properly classify it, I made a study of it. The older physicians call it "Indian fire," but seem unable to explain its pathology. Some confound it with varicella, and there are cases that resemble this. In the proper place I shall show the points of distinction between the two. "Indian fire" presents several distinct characteristics, but I have been unable to find a description of it in any text-book or cyclopedia.

It is best defined as a specific infectious disease of the skin, not accompanied by constitutional disturbance. It begins as a bunch of tiny vesicles thickly studded over a reddened area. There may be one, two, or more bunches, and the vesicles vary in size from that of a mustard-seed to that of a bleb from one-fourth to five-eighths of an inch in diameter. In a few cases I have seen, the vesi-

cles were widespread; but generally they are found only in a circumscribed area. The large vesicles are, probably, aggregations of small ones. There is no pain, no fever, but after the eruption appears the affected area has a peculiar burning sensation; if this be scratched, or the vesicles be broken, the itching is intense.

The diagnosis is not easy. The affection is often confounded with herpes. But the absence of pain and constitutional disturbance, the length of time the disease lasts, and its undoubted power of infection, clearly distinguish it from herpes.

It may also be mistaken for varicella, but there are three points of distinction: 1. The entire absence of fever. 2. The course and termination. 3. The location and distribution of the lesions.

The treatment is important. If seen early, the case is well in five or six days; but if neglected, as is often the case, it hangs on for weeks. I have one case that was not brought to my notice until more than six weeks had elapsed.

If seen early and a soothing ointment, ung. zinci oxidi, or an ointment of boric acid, powdered camphor, and lanolin is applied, with a mild laxative daily, the eruption quickly dries up and forms a scale, which drops off in the bath, leaving a reddened, but afterward normal skin, as in herpes. But if neglected, the blisters and vesicles are broken and the intense itching keeps the parts red, and the irritation increases the flow of serum; the parts are then found constantly bathed in a sticky, gummy fluid. In the cases that have come under my observation, the favorite location of the lesions was the face and neck, usually in both places at the same time.

Now, Mr. Editor, I would like to know more about this disease, and if it has any other name. What authors have described it, and when?

I neglected to state that it was introduced into Natchez from Louisiana, and all cases could be traced to the one source of infection.

Very truly yours,

J. C. BALLARD, M.D.,
Chief Health Officer, Adams Co., Miss.

NATCHEZ, MISS.

EPILEPTIFORM SEIZURES DUE TO OCULAR REFLEX.

To the Editor of THE MEDICAL NEWS,

SIR: M. O. C., an unmarried domestic, eighteen years of age, in good physical health, consulted me on March 28, 1892, for what she called "nervous spells," which had occurred at frequent intervals during the past three years. She had taken every remedy that many physicians and others had prescribed for her, without any influence upon the seizures, which came on whenever she looked at any object steadily for a moment or two. She could neither read nor sew, as any such work tended to bring on the "spells." The external examination of the eye was negative. Visual acuity in the right eye was 20/80; in the left 20/100, but the letters seemed to her to be continually moving. The accommodation was paralyzed with atropin, and three days later vision in each eye was found to be 20/200. Her refractive error was as follows:

R. + sph. 4.5 D. ⌒ — cyl. 1. ax. 180 = 20/20.
L. + sph. 4.00 D. = 20/20.

The retina was hyperesthetic, the ocular tension normal. No examination of the field was made.

Correcting lenses were ordered and the atropin continued for one week, during which time the nervous seizures entirely disappeared. After the effect of the mydriatic had passed away the patient had no more seizures, except when the glasses were removed. During a visit to my office I removed the glasses and at once the patient began looking fixedly at the lamp, the stare becoming more pronounced until a swaying motion began, during which breathing was for a moment imperceptible. The patient seemed about falling to the floor, but was caught and led to a seat. The skin became cold and bathed in a cold perspiration. Respiration was panting or sighing in character, and then there was a spasmodic action of the mouth and throat, as if the patient were trying to swallow something. She refused to lie down, saying that she would be "all right in a minute." In about ten minutes she was as well as ever.

Very sincerely yours,

W. F. CONNERS.

OIL CITY, PA.

THE GROWTH OF THE FINGER-NAILS.

To the Editor of THE MEDICAL NEWS,

SIR: When seventeen years, being interested in physiology, I saved the finger-nail parings for a period of seven months from January 1st. Great care was taken to save filings as well as cuttings, and the loss, except from ordinary wear, was insignificant. In regard to variations due to temperature and use of the hands, the result may be considered a fair average. After years of drying in a tin box, which was found in a garret among rubbish two or three years old, the combined parings of the ten finger-nails weigh (1.56) one gram and fifty-six centigrams. This is at the rate of about (2⅔) two and two-thirds grams per year; or, say, a quarter of a kilogram (half a pound) in a long lifetime of ninety years.

During an attack of sapremia, due to infection of the thumb at an autopsy, the swelling interfered with the circulation in the thumb for several days. After a week or two a distinct groove, one millimeter deep, was noticed in the nail, parallel to the skin-border, from beneath which it had emerged. It took almost exactly five months for this groove, which was undoubtedly formed at the time when the felon was at its height, to travel to the end of the finger, a distance of eighteen millimeters. This represents a rate of forty-three and two-tenths millimeters a year, or 3 meters, 888 millimeters (3.88) in a lifetime of ninety years.

Beau, quoted in the *Reference Handbook of the Medical Sciences*, estimates the growth of the finger-nails at a millimeter a week, slightly in excess of the rate noted in this case. The discrepancy is easily explained by the fact that for two or three months the circulation in the thumb was sluggish. Even now, four years after the infection, the interphalangeal joint is limited in motion, and the circulation is not perfect.

Very truly yours,

A. L. BENEDICT.

BUFFALO, N. Y.

THE MYSTERY OF ICE-CREAM POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: Apropos of a paragraph in THE NEWS of September 2d, page 275, on "The Mystery of Ice-cream Poisoning," allow me to call your attention to the discoveries of Prof. V. C. Vaughan, which should be better known.

Dr. Vaughan obtained, in 1885, a ptomaïne from milk and cheese, which he identified as a salt of diazo-benzene, $C_6H_5N_2$. He has investigated its chemic and physiologic properties, and the conditions of its formation. It has the curious and striking property of being explosive. In the human subject it produces the usual symptoms of cheese-poisoning; in children, those of cholera infantum.

Detailed accounts of these investigations, including chemic tests and separation, practical suggestions for preventing the development of this ptomaïne (tyrotoxicon), and for destroying it when its presence is suspected, have appeared in various publications.[1] Cases of wholesale poisoning by ice-cream are, indeed, lamentably common; poisonous milk, possibly, is responsible for much infantile mortality, and much of this might be prevented, and much unjust suspicion averted, if the guardians of the public health made the facts a matter of general knowledge. Very truly yours,

CHARLES E. PARKER.

EAST ORANGE, N. J.

DR. RHOADS'S METHOD OF LENGTHENING BONES.

To the Editor of THE MEDICAL NEWS,

SIR: Since the appearance of your editorial of Nov. 28, 1891, on "Dr. Rhoads's Method of Lengthening Tendons, Nerve-trunks, and Bones," in which especial attention was called to the utility of the method in lengthening bones, I have been experimenting on bones, and have come to the conclusion that they can be both lengthened and shortened to any desired extent. I believe, however, that owing to muscular resistance, better results can be obtained by shortening the bone of a leg that is two inches longer than its fellow than by lengthening the short one (provided the patient would consent to have his stature shortened). If the lengthening should be insisted upon and the muscles should prove to be very troublesome, they could generally be lengthened in the same manner as the bone had been done.

The following description as you gave it in your editorial I deem sufficiently explicit, with the simple change of the words *cut* and *tendon* to *saw* and *bone:* "Saw transversely half through the bone, then longitudinally to any desired extent, and finally finishing the division by sawing through the remaining half of the bone on the side opposite that on which the original transverse incision was made and at a point longitudinally removed from it."

As it has now been nearly two years since I began to study and experiment as regards the extension of the method to bones, and not having had an opportunity in my small field of surgery to do the operation, I thought it better to write this than to wait longer for a proper subject. Respectfully,

J. NEELY RHOADS, M.D.

1610 S. SEVENTH ST., PHILADELPHIA.

[1] V. C. Vaughan: A Ptomaïne from Poisonous Cheese. Zeitschr. f. Physiolog. Chem., x, 146; Journ. Chem. Soc., l, 373; Mich. State Board of Health Reports, 1885.

Tyrotoxicon: Its Presence in Poisonous Cheese, Ice-cream, and Milk Amer. Assoc. Adv. Sci., August, 1886; Journ. Analyt. Chem., i, 24.

The Chemistry of Tyrotoxicon and its Action upon the Lower Animals. Journ. Analyt. Chem., i, 281.

Prof. A. B. Prescott: Organic Analysis. 1887. Page 514.

NEWS ITEMS.

Dr. Paul Ernst has been made professor extraordinary of Pathologic Anatomy at Heidelberg.

Gustave Antoine Richelot, one of the founders of *L'Union Médicale*, died recently at the age of eighty-seven years.

Dr. Ladislaus Gluzinski has been elected ordinary professor of General and Experimental Pathology in the University of Cracow.

Prof. Wagner, of Prague, is in contemplation as the occupant of a new chair of Psychiatry to be established in the University of Vienna.

Dr. George Juffinger, formerly of Vienna, has been made professor extraordinary of Laryngology and Otology at Innsbruck.

Prof. Siemerling, of Berlin, has been elected to the recently established chair of Psychiatry in the University of Tübingen.

BOOKS AND PAMPHLETS RECEIVED.

Clinical Notes on Chancre of the Tonsil, with Analysis of Fifteen Cases. By L. Duncan Bulkley, A.M., M.D. Reprinted from the Transactions of the Medical Society of the State of New York, 1893.

Cholera: Its Causes, Symptoms, Pathology, and Treatment. By Roberts Bartholow, M.D., LL.D. Philadelphia: Lea Brothers & Co., 1893.

Laparotomy for Apparent Intestinal Paralysis which Caused Arrest of the Intestinal Contents and was Equivalent to Intestinal Obstruction. By W. W. Keen, M.D. Reprinted from the Kansas City Medical Index, 1893.

Case of Cancer of the Hepatic Flexure of the Colon producing Intestinal Obstruction; Temporary Relief by an Artificial Anus; Later Reëstablishment of the Continuity of the Bowel by Ileo-colostomy by Means of Murphy's Button. By W. W. Keen, M.D. Reprinted from the Annals of Surgery, 1893.

An Ovarian Tumor Weighing 111 Pounds Removed from a Child of Fifteen, whose Weight was 68 Pounds. By W. W. Keen, M.D. Pamphlet. Read before the Philadelphia Academy of Surgery, 1893.

Report to the Medical Society of the State of California, 1892. By E. H. Woolsey, M.D. Reprinted from the Transactions of the Medical Society of the State of California, 1892.

A Practical System of Studying the German Language for Physicians and Medical Students, For Self instruction. By Albert Pick, M.D. Part I. Pamphlet. Boston, Mass., 1893.

Electricity in Diseases of Women and Obstetrics. By Franklin H. Martin, M.D. With illustrations. Chicago: The W. T. Keener Co., 1893.

A Unique Case of Traumatic Neurosis. By R. Harvey Reed, M.D. Reprinted from the International Medical Magazine, 1893.

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ORIGINAL ARTICLES.

THE INFLUENCE OF CLIMATE ON THE BREATHING-HABIT, WITH A COMPARISON OF AMERICAN CLIMATIC RESORTS.

BY SAMUEL S. WALLIAN, A.M., M.D.,
OF NEW YORK.

THERE ought to be a special text-book and a special chair in every medical school devoted to the principles and practice of respiration. No department of physiology is so vitally and universally important, and none is so universally slighted and ignored.

In all wasting and in most other chronic diseases, what is termed by physiologists *the equilibrium of metabolism* is disturbed. The patient no longer replenishes and repairs as rapidly as he wastes. This lost equilibrium can be reëstablished and preserved only by prompt and persistent recourse to all known hygienic and physiologic resources. Instigating and underlying all the vital functions, and back of all forms of tissue-change, is the unique and fundamental function of respiration. Breathing is the indispensable preliminary process and *sine qua non* of digestion. An imperfectly performed breathing-function means proportionately diminished digestive power, inadequate assimilation, retarded metabolism, insufficient hematosis, and, consequently, anemia, emaciation, and general vital decline. Many chronic invalids are more or less handicapped in the struggle for life by an inherited or acquired lack of lung-capacity; and yet, with very few exceptions, this lack can be overcome if the capacity possessed be at all times thoroughly and fully utilized. Patients are quite inclined to unthinkingly and perhaps unconsciously avoid this, unless they be placed under conditions that naturally tend to induce if not to actually compel it. Thus the total respiratory capacity of an average male adult is placed at from 200 to 230 cubic inches; but of this only an almost inconsiderable fraction is habitually brought into use, leading authorities in respect to physiologic data asserting that the quantity of tidal air inhaled at each ordinary and passive respiratory effort does not exceed from 20 to 30 cubic inches. Accepting this statement, it follows that not more than one-eighth of the total quantity of air in the lungs is subject to renewal at each ordinary act of respiration, the other portions being designated, respectively, *complemental*, *reserve*, and *residual* air. These several portions are estimated and defined as follows:

Complemental air, 110 cubic inches, is the volume that can be forcibly inspired over and above what is taken in at an ordinary normal respiration. *Reserve* or *supplemental* air, 100 cubic inches, is the volume of air that can be expelled from the chest after a normal quiet expiration. *Residual* air, 100 cubic inches, is the volume of air that remains in the chest after the most complete or forced expiratory effort.

The breathing-apparatus is therefore endowed with a remarkable and fairly disproportionate reserve fund and capacity, which can be impressed into service at any time to meet any unusual contingency of the vital necessities or physiologic demand. How far and how fully this reserve can be made to reach and remedy pathologic conditions is a subject that has hitherto received but a modicum of professional attention. Waldenburg vaguely presaged its possibilities in advocating his compressed-air chambers, and the more recent pneumatic cabinet was another somewhat cumbersome effort in the same direction. These purely mechanical and compulsory means of accomplishing the object sought—lung-expansion—bear about the same relation to normal physiologic measures that dumb-bells and Indian-clubs bear to rowing, hunting, tennis, and other forms of pleasurable exercise. They may be utilized under certain unusual conditions and in some emergencies with decided and unmistakable advantage; but they are too formal, too heroic, and not susceptible of sufficiently accurate regulation to ever become of more than limited availability.

Among the natural and universally applicable means and methods, consciously or unconsciously advised, and either empirically or intelligently adopted and used, with the result of calling into service more or less of this reserve capacity and resource, may be mentioned all the multitudinous forms of muscular exercise—pedestrianism, horse-back riding, rowing, hunting, mountain-climbing, out-door games, and old-fashioned *work*. As imitations of all of these, we have mathematico-anatomic systems of gymnastics, the health-lifts and "home developers." Resort to any of these increases the breathing-necessity, and to the same extent compels the utilization of reserve respiratory capacity. Any treatment of pulmonary and other wasting and

chronic diseases that ignores the fundamental and paramount value of an enhanced breathing-function is from the outset severely, if not hopelessly, handicapped. Forced feeding, increasing the proportion of the so-called respiratory foods, intra-pulmonary disinfection, and antisepsis, chemic antidotes, toxic inoculation, and the use of artificial oxygen, have all been resorted to, in the hope of finding some approximation to a specific *règime* or method by which to combat the annual inroads of the more prevalent and fatal forms of chronic disease. But notwithstanding the professional *éclat* with which some of them were announced, the high hopes entertained, and the painstaking accuracy and expertness with which the details of complicated experiments were carried out, all alike—hot-air inhalations, sodium and gold chlorid, beechwood creosote, tuberculin, and pyoktanin—all have professionally proved flat failures and popularly cruel delusions.

Doubtless the professional dreamers and theorizers, delusionist imitators of Ponce de Leon, who, in or out of the profession, still cherish a vague and nebulous, if not outspoken, faith in the existence of some sort of scientifically refined and modernly improved philosopher's stone, who have never admitted the impossibility of evolving a perpetual motion or self-replenishing force, and who are quite convinced that the Kochs, Pasteurs, and Brown-Séquards of the age are on the eve of announcing a direct antagonist, an autotoxic, germ-engendered antidote to pulmonary tuberculosis, impotency, rheumatism, and old age, will continue the fascinatingly hopeless search for specifics. But evidently the sooner the profession and the professors abandon all attempts to evolve or discover chemic, dynamic, organic, "kinetic," or any other real, far-fetched, or phantom form of "remedy" for the various forms of wasting and constitutional diseases, the sooner will wise physicians begin to avail themselves of the wide range of rational and strictly physiologic agencies and resources that have always been at command, that are as old as Nature, and that we are almost ready to recognize as the only forces, influences, or materials in the universe that can logically be termed "remedies," and that must, therefore, eventually become, in legal parlance, our court of final resort—the oyer and terminer of physiologic as of pathologic science. Props, aids, and temporary palliatives, it is true, abound; and some of these, from time to time, acquire transient renown as specifics. But after flourishing for a brief day, as the fad or fashion of the profession, and somewhat longer as an overdone popular craze, each is relegated to the dusty shelves of the world's already crammed museum of delusional relics, to be referred to in the future history of the healing art as the momentary phantasy of physiologic myopes, who studied pathology and therapeutics from the standpoint of the dead-house, the rabbit-pen, and the laboratory, rather than from Nature and the clinique. The dead-house and laboratory searchers and inoculators are still in the field, but already their periodic "discoveries" and "scientific" sensations are beginning to be received with incredulous apathy and cynical impatience; and a generation or two hence the whole tribe and race of them will have become extinct.

The history of medicine and surgery, as it has been exploited or developed during the past quarter of a century, will be filled with the débris of dishonored and discarded "great discoveries," the godchildren of a hundred would-be eclipsers of Harvey, Jenner, and Pasteur. In that history the "chemic" and quintessence quacks will have their share, but these have not all been without the pale of the profession proper. For years opium, quinin, and coal-tar derivatives have been the sheet-anchors of the busy physician, and surgery has leaned upon cocain and mercuric chlorid. Just now the "animal extracts" are having, or at least demanding, an inning. A little further on the surgeons will wonder how their predecessors could have dared or needed to be so careless and lavish with the temptingly delusive cocain and the insidiously dangerous bichlorid; and the "animal extract" man—if he should live so long, through the timely absorption of his wonderful organic essences and vital resuscitators—will be heralding some newer and more remunerative if not more mysterious fad.

Dropping the digression, there would at first thought seem to be no direct relation between climatology and the breathing-habit; but a little reflection will disclose a very intimate inter-dependence between the two. Climates differ greatly in regard to mean temperature, and especially as to temperature-range, relative and absolute humidity, and in regard to altitude. That is to say, climatic variations depend to a certain extent upon all of these, and to a very definite extent upon increase or decrease of the elevation above sea-level; and all of these variations directly affect and determine the character of the breathing-habit. In any climate, whatever favors and induces an habitual out-door life proportionately and normally enhances the respiratory function. Equability, topographic attractiveness and scenic beauty, preponderance of pleasant weather, and especially of sunshine, absence of soil-moisture and of excessive atmospheric humidity—these are all qualities that make a climate desirable for chronic invalids, because they render open-air life and freedom of action at all times both prudent and pleasurable, and therefore inviting. Among the various artificial and generally much better appre-

ciated aids available at any location and in any climate may be cited mechanical facilities, artistic embellishment, and the moral and social environment. All of these aid in the psychic and mind cure side of the treatment, which should never be underrated or neglected.

The question as to where the best aggregation of these essential conditions and qualities can be found cannot be answered in a sweeping way in favor of this or that particular locality or climate for all all classes of invalids, but must to a certain extent be specially considered in each individual case, or at least in each general class of cases. At the same time, certain general rules apply to all cases, barring individual idiosyncrasy and any peculiar circumstances or conditions affecting and surrounding a given case. While it cannot be questioned that our own country, with its wide stretch of both latitude and longitude, and its almost endless variety of altitudes and configuration, affords every gradation of climate and scenery that could be rationally asked for, the patriotic prejudice indulged by those who decry all resort to foreign climes is without physiologic basis, and is narrow and sectional at best, as the whole earth is for the whole race, if they can compass it; and if patient, friends or physician has an unreasonable predilection for the shores of the Mediterranean, the valleys and slopes of the Swiss Alps, or the spas of Vaterland, their incomes warranting the outlay, there is no reason why the whim should not be encouraged, as the turning-point in many an invalid's history has, to all appearances, been based on nothing more substantial.

Let us restrict the present inquiry to localities and climates embraced within the borders of our own country. Florida early acquired a reputation that has hardly been maintained. Patients, especially of the pulmonary class, were originally sent there indiscriminately and at random, solely on account of its sub-tropical and peninsular climate. At present much more discretion is being exercised, and many physicians hesitate to send any class of patients to that locality for various reasons, but chiefly on account of the marked tendency to malarial complications there present. In Florida none of the effects and advantages of varying altitudes can be obtained, the elevation at the highest point in the peninsula being not more than a few feet above sea-level. The annual rainfall is somewhat excessive, and when it does not rain the fogs and dews are heavy enough to keep vegetation perennially green, and, as a consequence, atmospheric humidity is proverbially excessive. This condition is inseparable from "the lay of the land" and the monotonous proximity and prevalence of water. The whole peninsula is practically an island, or an archipelago of islands, anchored in the Gulf. Its most ambitious rivers are little more than broad, alligator-breeding bayous, of black and almost stagnant water. Lakes abound, underground streams are not rare, water is found by digging a few feet, in some places but a few inches below the surface, and the whole region gives the impression of being "made land" over an oozy marsh, "the Everglades" still being in a transition-stage.

Notwithstanding these numerous and decided drawbacks, many cases of tuberculosis, particularly of the laryngeal type, and of imperfectly-recovered pneumonias, do remarkably well with a winter's sojourn in "The Land of Flowers."

Beyond the bare feasibility of spending the greater portion of every day in the open air, when rain or thick fogs do not prevent, there is nothing in the climatic characteristics to stimulate or in the slightest degree develop the breathing-capacity. It is inclined to be a debilitating and languor-inducing, rather than a tonic climate. On the other hand, the social amenities have been much cultivated. Palatial hostelries and inviting resorts, with ample accommodations and luxurious appointments, are plentiful, so that the fashionable, as well as invalids, flock to the St. James, the Alcazar, the Ponce de Leon, and the hundreds of less pretentious resorts, every season, rather to escape the rigors of our Northern winters, and to enjoy social sensations, with a languid *dolce far niente*, than with any definite sanatory purposes.

The mountain regions of Georgia and the Carolinas furnish a very different aggregation of climatic qualities and conditions. The various localities in this region that have thus far been developed and brought into favorable popular as well as professional repute possess many desirable features. A moderate range of altitudes is available, the temperature-range is moderate, the annual precipitation is only about forty inches, and atmospheric humidity is not excessive.

The soil is porous and absorbent, the scenery and surroundings romantic and attractive, artificial auxiliaries are in fair supply, and reported results are quite as favorable as those of any of the noted foreign resorts. The region is one of pine forests, and hence has the desired reputation for balsamic and ozonic emanations and influences, the value of which is now unquestioned, although sometimes overrated. The entire belt is, however, subject to one quite serious drawback, that of occasional sudden and trying temperature-fluctuations. For some invalids this is not necessarily disastrous. In fact, it adds zest and variety to their everyday experiences, and acts as a constitutional tonic; but it compels us to rate the climate as somewhat robust, so much so that a certain class of sensitive sufferers who seek it are disappointed, and are driven elsewhere.

The next most popular region in the eastern portion of the United States is found in Northern New York, and is known as "The Adirondack Wilderness." This locality, with its varied advantages, has been so thoroughly advertised and written up since the days of "Adirondack Murray" and poor Marc Cook that no extended description is necessary. Its elevation is similar to that of the Carolina and Georgia resorts, varying in the settled portions from 1000 to 2500 feet above sea-level. Its evergreen forests were originally so dense that the region was formerly known as the "Great North Woods," but the lumber vandals and the relentless railroads have recently been pushing their work of landscape marring and general devastation to such an extent that the country promises to become a wilderness in fact as well as in name. It posesses a remarkably porous soil, is utterly free from malarial taint, the scenery and surroundings are still surpassingly beautiful, and within the past ten years its natural advantages have been widely recognized and extensively supplemented by professional as well as non-professional enterprise and skill. The climate is uneven and unreliable, the temperature occasionally fluctuating as much as forty or fifty degrees in less than twenty-four hours. Taken one year with another, it averages decidedly bracing, in short, rather too much so for delicate constitutions or advanced cases. Game abounds, and for such as enjoy it and can give themselves over to a semi-sporting life, the Adirondacks offer an interesting and hygienically desirable field.

The White Mountain regions of New Hampshire are similar in many respects to the Adirondacks. Both are better adapted for the climatic treatment of asthmatics, dyspeptics, and sufferers from hay-fever, than for tuberculous patients or rheumatics. Both are gradually, but surely, becoming less and less desirable as invalid-retreats, and more and more popular as summer-resorts for professional sports, social adventurers, and such folk, from the larger cities. Nevertheless, many cases of pulmonary disease have been wonderfully benefited, when not permanently cured, by becoming permanent residents of "The Wilderness."

Minnesota and the Dakotas have had some repute as climatically favorable to tuberculous patients and dyspeptics, but now can hardly be compared with the numerous more desirable sections of this climatically varied and resourceful country.

Colorado has been and still is a Mecca for tuberculous patients, asthmatics, and some other classes of invalids, thousands of whom have realized gratifying relief, with a goodly number of apparently permanent cures, through a temporary or permanent residence on some of the high plateaus of the mountainous, mid-continental region. Nearly a quarter of a century ago, after several years' residence in what was then the Territory of Colorado, after studying its characteristics and resources, I said of its climatic and other advantages as a health resort:[1]

"Colorado, as a whole, occupies the topographic center, and in fact as well as figuratively, is the summit of the continent. Taken in detail its different localities present a great variety of elevation, ranging from 4000 feet, in the Arkansas valley, to 10,000 feet, and more, in the mountain parks. . . . As to what altitude, other things being equal, is most favorable for chronic invalids of the classes mentioned, this undoubtedly depends very much on the nature of the disease, the age, temperament, and habits of the patient, and the stage of advancement of the malady, whatever it may be. In some cases of asthma the higher the elevation resorted to the more speedy and perfect the relief. Occasionally, inveterate cases fail of substantial aid until they ascend to some of the mountain towns, a residence in the valley, as everything outside the mountains proper is here termed, only ameliorating the severity of the paroxysms. On the other hand, cases of advanced pulmonary disease, at the altitude of Georgetown—nearly 8000 feet—often prove speedily fatal, which at Pueblo, on the Arkansas—4500 feet—would steadily improve, or at least live in comparative comfort for some years. . . .

"Mere altitude is not, however, as a rule, the primary thing to be considered, although its influence is more or less marked in every case. . . .

"The physiologic effects of a residence in high altitudes are to hurry respiration, consequently to accelerate the pulse, and to compel a rapid and immediate augmentation of the breathing capacity, in order to provide the requisite quantity of oxygen, from the rarefied air inspired. Hence the danger to those far advanced with tubercular consumption and to such as are subject to pulmonary hemorrhage, or some forms of cardiac disease. . . . The climate varies considerably with the altitude and with the varying topography of the country. Lying as it does in that happy mean of latitude—37° to 41°—between the extreme temperature-ranges of the Northern States and the enervating heat and humidity of the Southern, the winters of this region are mild, comparatively little snow falling except on the mountain ranges, and the summers are remarkably cool and bracing. There is about a month of each season during which, in the valley country, the mercury at midday ranges as high as at New Orleans; but one needs to keep on hand, in July, about the same clothing as is required at Christmas; and there are not half a dozen nights in the whole season when a pair of blankets to sleep under are in any degree uncomfortable. In the mountain town, gloves and light overcoats are in demand, even in dog-days. . . .

"Consumptives in the first and second stages may come to this continental summit with assurance that whatever a tonic climate, natural hygienic surroundings, pure air and water, good food, grand scenery, romantic adventure, and perpetual sunshine can do for an invalid, here awaits them."

To-day this sounds florid; but the lapse of more than twenty years has not suggested any serious questioning of its enthusiasm; and at the time, at the instigation of one of the trans-continental railways, the paper from which the foregoing extracts are taken was submitted to the *Denver Medical Association*, for approval or criticism, and was by that body unanimously endorsed as a fair and not

[1] Colorado Gazetteer, Denver, 1871, p. 107, et seq.

overdrawn statement; whereupon (without my previous knowledge or consent), a million or more copies were published in pamphlet form, and distributed throughout the East and in Europe. Proprietors of sanatoria and invalid hotels have not yet ceased to use its substance as basis stock for much of their advertising matter.

But notwithstanding the general truthfulness of the picture, the same drawback referred to in connection with the climate of the Adirondacks exists in Colorado, but in a lesser degree. In other words, it is, for many patients, a decidedly heroic resort. To realize its benefits in the fullest degree the patient needs to be still sufficiently robust to live out of doors in all seasons, to camp, fish, shoot, or botanize in the mountains, or to herd cattle on the plains, and sleep on the ground, wherever night or a fit of drowsiness overtakes him. To go there to be housed in an overheated and over-upholstered hotel in Denver, Colorado Springs, or Manitou, with a hundred others similarly afflicted, is little better than would be the same fatal routine if pursued in New England or New York.

Omitting any mention of Texas, New Mexico, Arizona, and numerous other localities which have some desirable features as health-resorts, the most unique and unquestionably best "all round" American climate, that of Southern California, remains to be considered.

In these days of trans-continental railway building and sharp traffic competition, it ought not to be a fact that remoteness should in any case be synonymous with obscurity; yet the distance from the populous centers has unquestionably prevented both the laity and the profession from acquiring other than a very vague and inadequate knowledge of the most peculiar, and at the same time, in all its features, the most inviting and sanatory climate for invalids, as a class, that has yet been made known on this continent. It may be fairly questioned whether anything in Europe can boast of such a combination of favorable qualities, with so few objectionable ones.

Lieutenant Emory, who accompanied the invading army of General Kearney, in 1846, called attention to "the superb physical health of the Californians" he met, as indicated by their "white teeth, and the blood tingling in the cheeks of their orange-colored faces."

Michler was struck with "the superbly-formed native women" he saw in this region, "their bodies as straight as an arrow."

Blodgett asserts[1] that:

"The elastic atmosphere and bracing effects of the Pacific climate constitute a striking difference from those of the Eastern States. Whether due to the absence of humidity alone is not clear; but, whatever the cause, it is a notable practical feature. . . .

"The interior valleys, where the heat is excessive, are similar to the cold coast also, and there is no climate which is not the reverse of enervating in its whole extent. . .

"All residents concur in pronouncing it more favorable to physical and mental activity than any they have ever known, from whatever quarter they have come."

Standing on the shores of San Diego Bay, Professor Agassiz exclaimed: "I have seen many lands; this is one of the favored spots of the earth."

Helen Hunt Jackson, who dwelt for some time in this Pacific coast edition of Eden restored, and made one of its secluded mountain gorges the scene of one of her most interesting romances, aptly described the favored valleys of Southern California as an island on land, so completely is the region insulated from the climatologic conditions which immediately surround it. She adds:

"Climate is to a country what temperament is to a man—Fate. And the word 'climate' is simply a statement of bounds defined according to the obliquity of the sun's course relative to the horizon—in other words, the slant of the sun. The tropics are tropic because the sun shines down too straight. In the temperate zone the sun strikes the earth too much aslant. There are a few spots on the globe where the conditions of the country override these laws and do away with these lines of discrimination in favors. Florida, Italy, the south of France and of Spain, a few islands, and Southern California complete the list."

General Greely, formerly chief of the United States Weather Bureau, in an instructive article, after describing the qualities that may be said to constitute an ideal climate,[1] adds:

"There is possibly one place in the United States where such conditions obtain, a bit of country of about forty square miles at the extreme southwestern part of the United States, in which San Diego is situated; but even here, perhaps once in two or three years, the sultry blasts of the Mojave Desert pass over the low mountain range and parch this favored district."

Brown,[2] discussing the climatic resorts of three continents, after having spent the best part of a lifetime in travel and observation, commits himself to this enthusiastic opinion:

"For those who are simply delicate, or inherit a tendency to consumption, I know of no country where I should regard the chances better for fair health and a prolongation of life than a residence in Southern California."

Charles Dudley Warner, in a work entitled "*Our Italy, or the Riviera of the United States*," published by the Harpers, expresses himself with even greater enthusiasm:[3]

"Any description would fail to give the charm of existence here; restlessness disappears, but there is no languor or depression."

[1] Climatology of the United States, p. 200.

[1] Scribner's Magazine, April, 1888.

[2] Harper's Monthly, November, 1887.

[3] Our Italy, New York, 1891.

He is of the opinion that the summer climate is quite as favorable and desirable as that of winter, for both pleasure-seekers and invalids, and emphasizes the fact that the winters are so mild that one is not obliged to expend the best part of his vitality in a six months' battle with the elements, as is the case in so many parts of the East. He adds some comments which it will be well for medical men as well as invalids to make careful note of:

"It is impossible to give an Eastern man a just idea of the winter of Southern California, who while gazing on gardens laden with tropical plants clothed in their rich and luxuriant foliage, or on the date and banana ripening in the bright sun, and on the strawberries of his warm months, which here are being gathered in mid-winter, cannot understand why he needs an overcoat . . . To the Easterner coming here with the expectation of finding the proverbially warm climates of the tropics nothing but disappointment will result. Health does not demand either the summer heat of the East or the great artificial heat of the houses of those regions, which usually is raised above 75° F. . . . The temperature of winter that has been found most congenial to either well or sick has been the temperature of from 55° to 60°; and with such a temperature, fogs, mists, or rains are in no way harmful, even to the invalid. As observed, this temperature is not an agreeable one for those accustomed to extremes, and many will perpetrate the blunder of housing themselves before a hot stove in a close room; the wise will simply clothe themselves properly in warm woolen garments, protect their feet with sensible shoes, and breathe the cooler air."

Contrasting the habits of the Chinese and Americans, he continues:

". . . But in this regard—how to weather the weather—we can learn something from that (the Chinese) nation . . . Their houses are open, and like the South American, the Chinaman will never sit in an apartment with closed doors. Draughts and air-currents affect neither the Peruvian, Colombian, nor the Chinese mandarin. . . . There is one thing that the barbarian will not do, however—something our Americans are continually doing, with great persistency—cram their guests' lungs full of foul and over-respired air. People should not forget that it is all-important to keep the body warm—something that can be done with appropriate clothing—but that if we wish to be well and keep healthy we must breathe fresh air, and that air of a temperature of 55° or 60° is not too cold for breathing purposes, even if disagreeably cold to the body surface."

Lay testimony might be multiplied indefinitely, and it is often more indicative of the real characteristics of a particular climate or locality than some professional descriptions. Professional evidence, however, is not wanting.

Dr. Remondino, of San Diego, has spent nearly a quarter of a century in the region, and has written extensively of his experiences.[1]

As coming from a keen observer, eminent as a physician as well as a writer, some climatic aphorisms and brief descriptions from Dr. Remondino's work will be found to fully corroborate the enthusiastic opinions of lay observers already cited:

"Equability and ventilation, and not altitude are the real factors in affording immunity from phthisis.

"Southern California is generally sought for its balmy, aseptic air, genial atmosphere, and invigorating climate. . . . Violets and invalids require a different locality and atmosphere.

"This portion of California has its climate modified by the marine currents. . . .

"Heat is brought to the American coast by two currents—the Kuro-Siwo or Japan stream, and the great circular North Pacific drift-current. Cold is imparted from the colder waters coming from the many cold, deep ocean currents with which the Pacific abounds.

"The effect on the climate produced by this peculiar condition of the ocean water is to give it a constancy of temperature.

"The generality of the soil is of disintegrated granite, and very sandy and porous . . . Such a thing as soil moisture cannot exist. . . . Always being dry, the soil is very warm."

Referring to temperatures, he states that:

"In the ten years from 1876 to 1885, inclusive, 3653 daily observations recorded show that on no one day during the ten years did the mercury remain below 40° more than one or two hours; on not a single day did any unusual warmth continue more than a few hours, the highest minimum for any day being only 70° on five of the 3653 days.

"Out of the same 3653 days there were 3560 days on which the mercury did not fall below 40°, 3533 days on which it did not rise above 80°, 120 on which it rose above 80°, 41 above 85°, 22 above 90°, 4 above 95°, and only one day on which it rose above 100°. The lowest maximum for any day was 52° on 4 of the 3653 days.

"It is temperature that has kept civilization within certain geographic limits; it is temperature—and that alone—that allows of free ventilation, which is the real and only safeguard against phthisis. . . .

"Perfect ventilation is impossible where the rigor of the climate and sedentary occupation require that all of the cold, external air be excluded and all of the internal warmth of the rooms be retained, that the occupants may be in temporary comfort. . . .

"To fully carry out that perfect ventilation which is an imperative necessity to health and life, *the nature of the climate must be such as will allow it to be done in an automatic or self-adjusting manner, as otherwise it will not be done;* living in unventilated apartments becomes such a habit that when once established it is hard to eradicate. The stupefying and life-slowing effects of a foul and vitiated, close atmosphere seem to become, after a time, a part of the physical existence and a necessity with many; so much so that they become positively uncomfortable in fresh air.

"*In Southern California it is never necessary to close the houses, either to exclude the heat of summer or the cold of winter.* . . . . Families have lived, my own being among the number, for several years, with wide-opened windows, without awnings in summer or fires in winter, in the greatest of comfort, showing the ease, practicability, and comfort with which free and constant ventilation can be practised in this climate."

The same author in an article in the current (October, 1893) number of the *California Magazine*, adds a summary of advice:

"I am often asked what part of Southern California is best adapted to certain individual cases. This is, of

[1] The Mediterranean Shores of America. Philadelphia: The F. A. Davis Co., 1892.

course, largely a matter of personal and contitutional election. . . . . Rheumatic, neuralgic and laryngeal cases do better in the interior. . . . . Convalescing cases recovering from some long and tedious illness, and those suffering from nervous prostration, insomnia, or the debilitated stages of advanced pulmonary tuberculosis, are more benefited by the bracing air of the coast. . . . . The region offers every conceivable variety of temperature met with in either Europe, Africa, or Asia. The shores of Africa and the interior of the great Sahara; the highlands of Spain and the low hills and plains of Italy; the abrupt Apennines and the more gigantic Alps of either Switzerland or Bavaria; the heather-clad hills of Scotland and the sunny islets of the Greek Archipelago—all have here their counterparts. Yet with this strange diversity, the climatic factorial influence of the great heated desert and the vast cold ocean combine to produce a homogeneity that makes California unique among the known regions of the world."

Briefly, the climatic features of this region may be thus summarized:

1. A mild, equable, and yet bracing temperature.
2. A warm and porous soil.
3. Pure, aseptic air and freedom from miasmata.
4. Preponderance of sunshine, light rainfall.
5. Absence of high winds and storms. (Thunder and lightning are practically unknown.)
6. Ready access to a great variety of elevations, ranging from sea-level to 10,000 feet or more, as desired.
7. A varied and beautiful landscape.
8. A soil-productiveness unparalleled in any civilized quarter of the globe.
9. A combination that, as a whole, constantly and automatically tends to enhance the respiratory function and to stimulate and develop the breathing-habit.

Finally, as it is now practically admitted that nearly all chronic constitutional perversions and morbid diatheses—pulmonary tuberculosis, lithiasis, the neuroses, chronic nephritis, diabetes, and fatty and other degenerative processes—are the direct or indirect sequelæ of persistent and habitual suboxidation, and that this result depends chiefly upon a passively-induced want of normal robustness in connection with the breathing-habit, the present status of biologic and physiologic science warrants the assumption or prediction that, by increasing the quantity of tidal air habitually and ordinarily utilized to twice or three times its present average volume, thereby securing a proportionately increased degree of automatically constant oxidation throughout the entire physical organism, the race might be rendered self-protective and practically immune as regards many, if not all, of these insidious, universally prevalent, and, at present, almost hopelessly fatal forms of disease, and the expectation of life, on which mortality-tables are now based, materially and almost indefinitely increased.

WASHINGTON HEIGHTS, WEST 181ST STREET.

THE SPINAL CORD IN POTT'S DISEASE.[1]

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IN considering the pathology of the nervous symptoms of caries of the spine we need pay but little attention to the morbid anatomy of the bone-disease. We may define Pott's disease pathologically as an osteitis, usually tuberculous, of the bodies of one or more vertebræ, resulting in caseous necrosis and caries. Rarely the primary cause is syphilis and not tuberculosis. The bone-disease may be secondary to inflammation in neighboring structures. Finally, sometimes in septicemia secondary abscesses occur in the vertebræ. It is a curious fact, and one for which so far as I know no satisfactory explanation has been given, that this osteitis is most likely to occur in the dorsal region. The explanation sometimes offered that this region is the most exposed to injury does not explain, for the causal relation of trauma to Pott's disease has not as yet been positively proved.

The conditions mimicking Pott's disease—malignant tumors of the vertebræ and aortic aneurism—we may dismiss without further mention.

The first question for our consideration is: Upon what do the nervous symptoms depend? Are they caused directly by the angular curvature and the consequent narrowing and angulation of the canal? In the great majority of cases, no. It is, of course, true that if a carious vertebra suddenly breaks down and fragments of bone are driven forcibly against the cord, or if the odontoid ligament gives way, we will find sudden, severe, and even fatal nervous symptoms; but ordinarily, even if the diameter of the vertebral canal be diminished by the sudden breaking down of a vertebra, the cord slips behind the projecting bone and escapes very serious compression. In by far the greater number of cases the nervous symptoms are due to inflammatory changes in the dura causing pressure upon, and later, organic changes in the cord and nerves. So soon as the osteitis has progressed far enough to cause a breaking down of the posterior surface of the body of a vertebra and ulceration of the posterior common ligament, and consequent communication with the loose tissue filling up the epidural space, inflammatory changes due to direct contiguity of tissue arise in the latter and soon appear on the external surface of the dura, ending in a pachymeningitis. When this process has progressed far enough to produce pressure upon the cord this organ, according to Hoffa,[2] becomes edematous

[1] Read at the October meeting of the Orthopedic Section of the College of Physicians, Philadelphia.

[2] Albert Hoffa: Transactions American Orthopedic Association. Fifth Session. Washington, 1891.

from the interference with the flow of lymph and a stasis of the fluids of its tissue. The retained lymph acts not only mechanically but also as a poison, producing at first softening of the cord with, at the same time, an increase of the connective tissue, which, when sufficient, causes sclerosis. The same is true of the peripheral nerves at their points of exit from the dura. Edema is of necessity present. As to the poisonous effect of retained lymph we need further investigation.

As the time at which communication is established between the diseased bone and the canal is, as one might say, accidental, or, rather, depends not so much upon the amount of bone-tissue diseased as upon the situation of disease in the body and the direction of its progress, it follows, as is well-known, that nervous symptoms, spasmodic abdominal pain, numbness or tingling in the extremities, alteration of the knee-jerk, paralysis, or indeed all of the symptoms referable to the cord, may precede deformity or, indeed, any sign of bone-disease. The reverse is also true. There may be severe bone-disease and marked angularity without nervous symptoms.

The liability to nervous symptoms varies with the region of the spine affected. Bouvier[1] found only five paraplegias among thirty-eight cases of lumbar caries; Coudroy de Lauréal only one paraplegia among fifty-nine similar cases. Among fifty-six cases of dorsal caries, on the contrary, Bouvier observed thirty-eight cases of paraplegia, and Coudroy nineteen cases among seventy-seven in the same locality. The reason of this greater frequency of paraplegia in dorsal disease is not difficult to find. The dorsal region is the most liable to severe deformity, and to abscesses with pent-up pus, and is normally the narrowest part of the spinal canal.

The inflammation of the dura may be either simple or purulent. If simple, the external surface of the dura is reddened, with here and there patches of lymph. So long as this condition persists there are few or no severe nervous symptoms. If the inflammation be purulent, there is pus, caseous material, and organized inflammatory products. The thickening varies much, sometimes amounting to half an inch, and may surround the cord, or occupy one side, or be irregularly distributed, with nodular or even fungoid growths scattered here and there. Adhesion to the bone soon takes place. Commonly, the thickening and adhesion occur first and are greatest in the anterior portion of the dura, and hence motor cord-symptoms usually precede sensory ones. The pachymeningitis is usually confined to the neighborhood of the diseased bone, but may extend far beyond its limits. Ordinarily, the inner surface of the dura and the pia-arachnoid escape inflammatory changes till late in the disease, even though the cord is seriously disabled. This being so, we are able to say that the changes in the cord are not due to a tuberculous process in it, but to the mechanical effect of pressure and possibly the irritant effect of retained lymph, as mentioned. When the pachymeningitis invades the inner surface and the pia-arachnoid, another element is added to the destructive process.

The pressure of the thickened dura affects not only the spinal cord but also the peripheral nerves at their points of passage through it, producing Gowers' "root symptoms" and "cord symptoms." Which set of symptoms predominate will, of course, depend upon whether pressure is greatest on the nerve-roots or on the cord, and also upon which part of the periphery of the cord is most involved. As a fact, "root symptoms" vary much in intensity. There may be simply pain in the course and distribution of the affected nerves or spots of anesthesia, sometimes painful areas, muscular wasting and palsy and, curiously enough, sometimes herpes zoster. The cord symptoms, as I have said, will vary with the varying portions of the transverse area affected, and of course with the variation in the longitudinal position of the disease.

These symptoms are too well known to need repetition. In disease of the three upper cervical vertebræ, however, there is at times a curiously anomalous distribution of symptoms. Instead, as might be expected, of paralysis of all four extremities, there may be palsy of the arms, without any affection of the legs. According to Brown-Séquard the explanation is that the motor tracts for the arms are more superficial than those for the legs, and hence are earlier involved in a lesion advancing from the periphery. On the other hand, Vulpian maintains that just the opposite is true, or in other words, that in the cervical region the nerve-fibers for the arms have already entered the gray matter of the cord, while those for the legs are still in the lateral columns. He claims on this very account that the arm-fibers will be more compressed, owing to the less density of the gray matter as compared with the white.

At autopsy in an advanced case the nerves are found much decreased in size, being sometimes mere threads. Under the microscope we find an increased amount of connective tissue, with an absence of many nerve-fibers, and sometimes with enlarged axis-cylinders. It is not strictly true to call this condition an inflammation. It is rather a degeneration. The cord ordinarily shows gross disfigurement at the seat of meningitis and curvature. It may be flattened, cylindrical, or indented. Angulation may be so marked as to persist after the removal of the cord from the canal, even in cases which at the time of

[1] Quoted by Mary Putnam Jacobi. Keating's Cyclopedia of the Diseases of Children, vol. iv, p. 646.

death presented no symptoms. I know of no case in which there was complete severance of the cord. Shaffer[1] refers to an autopsy in which a portion of the eighth dorsal vertebra was found impinging directly upon the cord, through which it had so nearly cut its way that only a slender thread remained.

On microscopic examination in severe cases a peculiar interstitial myelitis is found. The newly formed connective tissue, which at first contains cells, later becomes changed into a dense reticulum, which much increases the hardness of the cord. The nerve-fibers are to a greater or less extent completely degenerated, though usually some are left with narrowed myelin-sheaths, and a few may be normal. The anterior part of the cord is likely to be most affected. The gray matter cannot be distinguished from the white, and the ganglion-cells have lost their processes and are shrunken and atrophied. Scattered everywhere are found masses of myelin, granule-corpuscles, and corpora amylacea. The walls of the small vessels are often thickened by a growth of spindle-cells arranged concentrically around the lumen, making it smaller or obliterating it entirely. This cutting off of the blood-supply of course increases the damage to the cord. The changes are greatest at the point of greatest pressure, but extend for variable distances up and down the cord. Above and below the transverse myelitis are found the usual ascending degeneration in the posterior columns and descending degeneration in the lateral pyramidal tracts. But secondary cord-changes in this disease do not always follow the usual law. According to Gowers and Charcot there may be an ascending inflammation of the lateral pyramidal tracts with consequent symptoms referable to the arms. Anomalous symptoms are also produced occasionally by inflammatory foci scattered here and there through the cord or even the medulla. Again, if the nerve-roots are affected before the cord the pressure-neuritis may invade the cord, causing streaks of sclerosis in the posterior columns. In the cases in which there is a sudden paraplegia not caused by the direct pressure of a dislocated piece of bone, hemorrhage has occurred either in the inflamed membranes or, more rarely, in the cord.

The processes by which the cord regains its functions are not altogether clear. The nerve-fibers that suffer from pressure insufficient to cause organic change, and even those in which the myelin-sheaths are greatly narrowed, will of course resume their functions on removal of the pressure. But can a nerve-fiber in the spinal cord, if completely degenerated in a part of its course, be regenerated? In peripheral nerves regeneration certainly sometimes takes place. Quite as certainly it does not happen in the spinal cord if the destructive lesion is sudden. Apparently, however, if the lesion be a slowly increasing one, as ordinarily it is in Pott's disease, axis-cylinders may regenerate. It is also curious that there may be complete restoration of function in a cord the transverse area of which at the seat of former disease is half or less than half that of the normal.

[1] Transactions American Orthopedic Association, vol. iv, p. 156.

THE INDICATIONS AND PREFERABLE METHODS FOR MASTOID OPERATIONS.[1]

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WHEN and how shall we operate in mastoid disease? Among American surgeons there is a wide diversity of opinion, especially as to what symptoms constitute a positive demand for opening the mastoid process. My observations leave the impression that the majority of surgeons are too conservative, both as to the time selected for surgical interference and the extent of the operation. While conservatism is an admirable trait in a surgeon, so long as caution is not merged into timidity, so far as I have seen its influence in this class of cases it has proved detrimental to the patients. I have seen fatal results follow: (1) Refusal to allow the operation; (2) after operations too long deferred, and (3) after operations that were performed too timidly to remove all of the diseased tissue. I have never known death to occur as a direct result of the operation itself.

We all appreciate the gravity of this undertaking, but in view of the fact that the disease demanding it is far more dangerous than the surgical measures for its relief, greater freedom of action and boldness of methods will add luster to the records of our work.

When shall we operate? The weight of experience and the testimony of trustworthy authorities favor early operations. If we wait for the very grave symptoms—fever, rigors, vomiting, vertigo, widely diffused pains in the head and neck; thickly furred, tremulous, and indented tongue; delirium, etc.—the chances of success are discouragingly diminished. I do not believe it is wise to postpone an operation until these symptoms occur, unless the patient is suffering from some other affection that renders recovery hopeless, or unless the prostration is so great as to preclude the possibility of survival.

There are tentative methods of treatment that are proper and promising in incipient mastoiditis unattended by urgent or dangerous symptoms. I have

[1] Read before the Mississippi Valley Medical Association, October, 1893.

often subdued periostitis by the use of counter-irritation, compresses, and the free extraction of blood with leeches and warm, wet applications. Many cases of mastoid disease may be cut short by this early active treatment. I have seen very acute attacks with intense pain relieved permanently in this manner. If there is also acute inflammation of the middle ear, additional leeches should be applied about the tragus, and an opiate should be given. If decided relief does not occur within twenty-four or forty-eight hours we should not hesitate to make Wilde's incision, or if this does not relieve, to open the bone.

This statement, in my opinion, embodies as great conservatism as our duty to the patient justifies. Obviously, any rules that may be laid down must be more or less elastic. For example, a case recently came under my observation in which the mastoid had been opened. Another swelling appeared above the auricle, with fluctuation. I advised opening it, and pus was liberated. Subsequently the patient was brought to me with this opening almost closed, but pus could be pressed from it. There was severe periostitis involving the whole mastoid, temporal and zygomatic regions. I advised free incision extending through the two previous openings, but one of my assistants, Dr. Hollinger, desired to try the effect of pressure with antiseptic compresses. This treatment alone dispelled all the threatening symptoms in less than two days.

I have formulated the following six rules by which I have been guided in deciding the perplexing question of an operation:

The mastoid process should be opened

1. When there is acute inflammation of the bone that resists palliative treatment.
2. When repeated swellings and abscesses occur.
3. When there is bulging of the posterior and superior wall of the meatus with suppuration of the middle ear.
4. When there is a fistula.
5. When there are severe pains in the same side of the head as the diseased ear, and resisting all other treatment.
6. When a foul otorrhea cannot be cured by any other means.

These rules may be termed conservative, and whatever deviation we may indulge in ought to be at once favorable to the operation and the welfare of the patient. Too great temporizing favors sinus-thrombosis, septicemia, brain-abscess, and meningitis.

What method of operating shall we pursue? I have usually performed Schwartze's operation, but have also used Stacke's method, with gratifying results. The latter is one of the most difficult, delicate, and dangerous of operations.

As we cannot know the extent of the pathologic process before entering the bone, it does not appear to be advisable to decide in advance upon any special method of procedure save one: remove all dead and diseased tissue. Whatever method does this does best. Stacke's and Bergmann's operations have the advantage of affording the greatest accessibility to the tympanum, so that if it is necessary to remove necrosed ossicles or diseased tympanic tissue it can be done with greater facility and thoroughness, but it is best to guard against collapse of the walls of the meatus and resulting stenosis by inserting a tube in the canal. Schwartze's operation is sufficient for most cases. It is much simpler and leaves a less extensive wound. The operations of Wolf and Küster through the meatus I have never ventured upon, for fear of not possessing sufficient skill to remove all of the diseased tissue through such a narrow field of vision.

There are a few points in this connection worth mentioning, for they are closely related to a successful issue. The best illumination is gained by the use of light reflected from the mirror on the operator's forehead. This affords a decided advantage over direct light. It is more intense, can be thrown into the opening of the bone in every direction, and there are no shadows to obscure the field.

It is safer not to close the wound entirely until it has healed from the bottom. When the interior has filled with cicatricial tissue up to the surface of the outer table it is safe to allow it to close. I have had good results after closing the wound completely at the time of the operation, but it is certainly not so safe a plan.

The best dressing is one of dithymol diiodid (usually sold under the name of aristol) sprinkled over the wound-surfaces, covering them entirely. Then iodoform-gauze should be placed lightly in the mouth of that part of the wound chosen to remain open. It should not be packed down to the bottom of the wound so as to crowd any discharge inward, but it should extend just far enough inward to keep the cutaneous tissues from closing over the superficial opening in the bone until the deep wound is well. Dithymol diiodid has two excellent qualities: It is the best cicatrizant we possess, and it has the additional advantage of being to some extent an anesthetic. While iodoform is irritant and toxic and boric acid sometimes produces pain, dithymol diiodid soothes and heals without any ill effects.

After stitching that part of the wound to be closed and dressing the open mouth for drainage, the whole is covered with iodoform-gauze, absorbent cotton, and a net-bandage. This bandage is made of the common white mosquito cloth which, as used in the Northern States, is sized with a preparation

of glue. The roll of bandange is dipped in water just before applying, until it is wet through. Then the water is squeezed out and the bandage is applied as usual. When it dries, the layers adhere together firmly, so as to retain their position for many days in succession without any attention.

But the most perplexing question before us is: When shall we open the bone? My conviction is that the earlier the operation is performed the better our records will be. We should operate while the condition of the patient favors resolution instead of dissolution, and all dead and diseased tissue should be removed.

The safest and simplest rule by which I have been generally guided is this: When there is a fistula or a group of unyielding symptoms of serious sickness undoubtedly due to the ear-disease, penetrate the bone. Unlock the vault that holds our treasure and the sufferer's doom. Give vent to the pent-up furies of disease, as Æolus loosed the struggling winds. A merciless and unrelenting foe has stormed the fortress of the brain—the citadel of life. No truce is safe, and now heroic action only conquers man's great foe.

70 STATE STREET.

THE RELATION OF THE PATELLAR TENDON-REFLEX TO SOME OF THE OCULAR REFLEXES FOUND IN GENERAL PARALYSIS OF THE INSANE.[1]

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THE following observations are given as expressive of some of the most important and most certain of the findings that have been obtained in a clinical study of the ocular symptoms of general paralysis of the insane as observed in a large proportion of the male inmates of the State Hospital for the Insane at Norristown, Pa. Although tentative in a measure, and not to be found to equal degrees in each individual case, yet, by reason of a combination of a large series of similarly related groupings, these observations may be justly offered as showing the relationship existing between the patellar tendon-reflexes and the ocular reflexes in this disease.

With such provisions, and with the hope that these studies may serve as inducements to others for similar research, the following formulations are herewith offered:

1. In some of the cases in the second stage of the disease, especially when the patellar tendon-reflexes were unequally exaggerated, there appeared to be an irregular and unequal spastic innervation of the two irides, causing irregularities in pin-point pupil-forms.

2. In a few cases, especially in the third stage of the disorder, when the patellar-tendon reflexes were unequally diminished, and the pupil-size was small and the pupillary shape somewhat irregular, the iris seemed to be but little acted upon by any powerful mydriatic.[1]

3. In many cases, especially in comparatively young subjects in the third stage of the disease, when the patellar tendon-reflexes were unequally diminished, there appeared to be an unequal paralytic innervation of the two irides; the pupillary dilatation manifesting itself at times, though not as a rule, in the eye with the greater amount of objective optic-nerve-head degeneration and retinal change.

4. In a few cases (especially in men of middle life) in the third stage of the disorder, when the patellar tendon-reflexes were markedly diminished and when the ataxias were quite pronounced, there were marked temporary asymmetries of pupillary form, one pupil often being quite small and irregular for several examinations, whilst its fellow was large and ovoid or oval.

5. In quite a number of cases, especially in the advanced stages of the disease, when the patellar tendon-reflexes were either unequally exaggerated or diminished, there was a failure of the irides to respond to even major degrees of light-stimulus; this being true not only for those subjects exhibiting a true spastic myosis, but more especially shown in those instances in which, with partial dilatation of the pupil, mydriatics failed to act.

6. In many instances, especially in the older cases, when the patellar tendon-reflexes were, as a rule, unequally diminished or even lost, there was not only failure of iris-response to the strongest light-stimulus carefully thrown upon the retina, but when obtainable, the irides seemed to fail to react to the various coarse and rough subjective and objective procedures necessary to be used in order to evolve both separated and associated efforts for accommodation, and associated efforts for convergence.

7. In some instances in which ciliary muscle-innervation could be satisfactorily obtained, both the spastic excitation and the paralytic innervation at times found by subjective reading-tests and objective study with the retinoscope seemed to be in direct ratio to the patellar tendon-reflexes as the iridic changes.

8. In quite a number of cases in which there was

[1] Read before the American Ophthalmological Society, July, 1893.

[1] In several such cases there were marked depressant effects, with grave constitutional symptoms, produced by single instillations of $\frac{1}{40}$ and $\frac{1}{20}$ grain of neutral sulfate of atropin in the conjunctival cul-de-sacs.

marked inequality of the pupils, with more or less want of reaction of the irides to light-stimulus, the patellar tendon-reflex on the side of the larger pupil seemed to be the one the more greatly diminished.

9. In a number of instances, especially during the very earliest stages of the disease, when the patellar tendon-reflexes were beginning to lessen to unequal degrees, there often appeared momentary secondary ataxic dilatation of the pupil during exposure to strong light-stimulation.

10. In many cases, especially during the second stage of the disorder, when the patellar tendon-reflexes began to become irregular and inconstant, pupillary inequalities as expressive of unequal iris-innervation and action became more and more constant.

CLINICAL LECTURE.

RHINOPHARYNGEAL AND NASAL NEOPLASMS.[1]

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I. THE CURE OF A RHINOPHARYNGEAL FIBROSARCOMA BY ELECTROLYSIS.

GENTLEMEN: It is not often that one has the pleasure of showing to a class a case of cured nasopharyngeal fibrosarcoma, as I have the opportunity of now doing. Those of you who attended my clinic last year may remember this young man, twenty-three years of age, who came here during the winter with a face much deformed. He had been suffering for ten or twelve years with a tumor in his nose and pharynx that bled on the slightest touch. It looked so terrible that I was afraid to attack it, and I referred the patient to the surgical clinic, with the suggestion that the upper maxilla be resected and the tumor be removed by direct access, because in our indirect methods through the nose and mouth it seemed impossible to circumscribe it sufficiently. The operation was refused as unjustifiable, because it did not hold out enough hope of success, and the case was returned to the throat-clinic. Here, he would have been dismissed with palliative measures, for I had not the slightest idea of curing him; and but for the reproachful language of the physician who brought him, Dr. Harweter, of Allentown, Pa., I should not have tried it.

A tumor of this kind is very peculiar. For some reason or other unknown, in young adolescents just before puberty, usually in the male sex (for the growths are more frequent in the male), a neoplasm begins to form in the periosteum in front of the basilar process of the occipital bone—that is, at the base of the skull, either to one side or the other of the median line, rarely, if ever, in the center. Thence it extends into the pharynx, sometimes along the cervical vertebra, but much more frequently along the sphenoid bone. It forms attachments around the posterior outlets of the nose and the internal pterygoid plates of the sphenoid and the nasal septum. It becomes bound to the pharyngeal outlet of the Eustachian tube, passes into the nasal passages, and forms attachments to the turbinate bones and to the ethmoid bone, passes along the petrous portion of the temporal bone, penetrates into the zygomatic and the sphenomaxillary fossæ, passes through the sutures which unite the cranial bones and the bones of the face, then through the natural fissures and foraminæ that transmit the nerves and blood-vessels, and thus it gets into the antrum, into the orbit, and into the cavity of the skull—all the time pushing soft and hard tissues aside to make room for itself. Sometimes it stops under the dura, and sometimes eventually penetrates through the membranes into the brain. These neoplasms are generally known as nasopharyngeal polypi, and they are very terrible forms of tumor. They do not always take the full course described, though usually more or less of it. They often get into the nose and the accessory cavities, the maxillary sinus and frontal sinus, and deform the face peculiarly, the distortion being known as frog-face—a characteristic feature which this man had in a marked degree, and of which, to a certain extent, he still shows the evidence.

The prognosis in these cases is very bad, except in recent and circumscribed growths. They require surgical treatment. The rule is that the patient succumbs, whatever the operation. Some terrible operations have been performed for removal of these growths—preliminary operations, serious in themselves—simply to gain direct access to the neoplasm. Sometimes the nose is detached from the superior maxilla and turned up. Sometimes the soft palate is slit; and sometimes both the soft and the hard palates are divided. Sometimes the superior maxilla is resected, or the two superior maxillæ are separated in front through the hard palate. When direct access is attained the growths are removed as thoroughly as practicable with forceps, with scissors, with the snare, with the cautery, with saws, or by whatever methods seem most effectual. Under almost every method of operation they are likely to recur, and when they do recur they grow more rapidly than they did at first.

The method pursued in the present case was as follows: First, in the clinic, our chief, Dr. Jones, and his assistants removed as much of the growth with the electric incandescent snare as they could. They passed a platinum wire through a canula, and carried the loop as near as possible to the base of the growth. Then they tightened the wire and passed the electric current through the snare, and so continued tightening the snare and passing the current until the mass seized was cut off. When they had done as much of this work as possible, the patient was referred to me, and the remainder of the work was done mostly in my office, and chiefly by electrolysis; that is to say, by passing the currents of electricity through certain portions of the mass, an electro-chemic decomposition was set up in the tumor, as near as possible to its multiple points of attachment. You can understand by your knowledge of the growth and extension of these tumors that it is hazardous simply to take hold of them with strong forceps and pull. You may pull some important structure away with them, and thus do irreparable injury; you may even enter the cranium. More than one surgeon has seen his patient die on the table in the very effort he has made to prolong that patient's life. So you must be very careful when you try to pull such a growth away with the forceps. Elec-

[1] A Clinical Lecture delivered at the Laryngological Clinic of the Jefferson Medical College Hospital, Friday October 13, 1893.

trolysis produces an electro-chemic decomposition of tissue. If you put two electrodes from the respective poles of an electric battery in any liquid, or in a tissue largely composed of liquids, the result will be a decomposition of the liquids, the oxygen and the acids going to the positive pole, and the hydrogen and the alkalies to the negative pole. This fact is sometimes utilized for medical purposes, to get remedies into certain tissues by passing a properly arranged electric current through them. The tissues of the body are largely composed of water, and the oxygen goes to the positive, and the hydrogen to the negative pole, where the gases escape in bubbles of froth.

Now what is the result of destroying the water in the animal tissue? You dry that tissue up. The tissues exposed to the current become hard. The nutrient material cannot pass through this hard layer to the body of the tumor, and so its nutrition is thus far destroyed, and that part sloughs off, just as a limb is seen to do in a case of senile gangrene. This result is physical and physico-chemic. It is not due to any occult power in the electric force. In our patient this is what we did with our electric current, sometimes using plates, and sometimes needle-points, as electrodes at the different operations, thus destroying the paths of nutrition and favoring sloughing. As the sloughing progressed we pulled the dead tissue away with forceps. When we used plates of metal on the surface of the mass, we could see the part melting under our instruments as snow melts under the sun, although not as rapidly—very slowly indeed—but we could distintly see the foam of the oxygen and hydrogen as the tissue gave way under the electric action. This method of treatment is difficult in growths of this kind, on account of the complexity of the attachments, and many times have I spent over an hour in the procedure, becoming so exhausted that it was impossible for me to do any more work during the remainder of the day. We had in all between twenty and thirty sittings. The result was, that toward the end of June there was but little growth left, and that little seemed sloughy. I told the patient to go home and report in October. He reported yesterday, and on examining the parts I was glad to find every vestige of the growth gone. Several particles sloughed out after he went home. He can now breathe freely through both sides of his nose, and he does not now speak as though he had a hot potato in his mouth. He has gained ten pounds in weight. I have had several successes of this kind, but none of them in a case as extensive and apparently hopeless as was this. I have never known a case in which the tumor was taken away by resection of the upper jaw in which there was no recurrence. This method is both much the more thorough and also much the more difficult. The knife, sometimes even when you think you are cutting through healthy tissues, leaves more or less diseased tissue, and then, of course, another tumor grows. Again, in cutting, sometimes you carry disease to healthy tissues on your knife. I have never seen any success equal electrolytic operation through the nose and mouth, provided you take the time and the trouble. Of course, a single operation of an hour would have removed a portion only; here we had thirty or forty hours of work. The result has been excellent. When you look at the man's pharynx you will see a few rugged points, and a band across the pharyngeal outlet of the left Eustachian tube, probably due to an adhesion between the soft palate and the vault of the pharynx, a result of the operative procedures. This I will remove at some later date. Finally, let me remind you that it has occasionally happened that operations from the exterior have had to be abandoned, and yet the injury done to the parts has been such that sloughing took place and the tumor sloughed out, but you hardly dare operate with such a direct object in view.

II. TUBULAR EPITHELIOMA OF THE NOSE AND MAXILLARY SINUS.

Two years ago to-day I operated upon this patient, before the class, for a tumor of her nose that was difficult of access. In order to avoid an external operation and scarring, which is not desirable in a female, I turned up the upper lip and separated the nose from the jaw, pulling the nose upward up on the forehead. As you notice, the cicatrix is barely visible. I found that the growth was not confined to the nose, but extended into the antrum or maxillary sinus. We removed all the morbid growth with the forceps and scraped the parts, and then allowed the nose to fall in place. The parts healed kindly, and for three or four months the patient was completely relieved of severe pain and great difficulty of breathing. On examination by the pathologist of the hospital the growth removed was found to be an adeno-carcinoma or tubular epithelioma, and the probability of a recurrence was explained to the patient before she left the hospital. Since that time she has been here on several occasions for removal of recurrent growths, and her health has gradually become much impaired. During the last six months she has been here four times, probably as many as in the preceding eighteen months. That is the clinical history of these growths after evulsion or exsection; a relief of several months after operation, then a recurrence, and after that relief not so long, repetition of operation, and so on, the intervals between relief getting gradually shorter. We will again try to relieve her of her troublesome growth, but in the long run it will cause her death.

I purpose to operate in this case with a device which was employed by Hippocrates, and which I recommend you to use in cases of soft tumors, especially when you are not provided with surgical instruments. It is a string on which are tied a number of swabs. Two strings are passed through the nostrils into the mouth. The two ends of one are tied in front of the lips as a reserve in case it may be required to carry a tampon behind the palate to restrain hemorrhage. The oral end of the other is tied to the kitestring of swabs, which are then pulled forward through the nose, carrying with them a lot of this soft tissue. The end of the string of the first series of swabs is tied to another series and the procedure repeated. You will have greater success with this, perhaps, than with cutting instruments or with forceps.

III. PEDUNCULATED PAPILLOMA OF THE UVULA.

This is a case of papilloma of the uvula, a few examples of which we have every year. You notice a long pedicle, more than an inch in length, hanging from the tip of the uvula and supporting a cauliflower growth. This growth originally existed on the uvula perhaps, but

in efforts at deglutition it has gradually been drawn down and down until the mucous membrane has become elongated into this long pedicle. The treatment will consist in simply snipping it off with a pair of scissors, at the tip of the uvula, as you will watch Dr. Jones, our chief of clinic, do for us. The uvula itself, you see, is somewhat elongated. Should it not retract sufficiently after being freed of its growth, say in a month or so, we will exsect a portion in your presence.

IV. MULTIPLE MYXOMA OF THE NOSE.

This is a case of myxoma of the nose. If you look in the nasal passages of this woman, you will see globular pale-reddish masses on either side, which, we judge, are nasal polypi. These are very troublesome cases. They are usually the result of what is known as catarrh. In some cases of chronic catarrh in the mucous membrane of the nose you will find on the surface polypoid thickenings which grow into tumors, varying in size from that of a grain of rice to that of a large oyster. These tumors are gelatinoid and technically termed myxomata. Usually they are pedunculated. Only rarely do you find but one; there are generally a number of them —sometimes twenty or more, and sometimes one extracts a large handful and wonders whence so many could have come. After you have removed the larger ones you will, as a rule, find a number of smaller ones in the neighborhood, and unless these, too, are removed they grow rapidly and give you an opportunity to operate again and again. The only method of curing the affection is by removal. Sometimes these growths project into the pharynx, whence they are removed by traction and torsion, after having been grasped in the bite of, forceps or caught in a snare. Occasionally they project from the nostril. It is considered barbarous to remove them with the forceps, but it is not barbarous if correctly done. The old-fashioned method was to take the forceps and put it in the nose without looking at the interior, and then to feel around with forceps until the growths are grasped. Sometimes the turbinated bone was caught. But if light is reflected into the nasal passage so that the polypi can be seen, and a pair of delicate forceps is passed upward until you get at the pedicle of the growth, after pressing and holding it tight for half a minute, a turn is given before traction is made, and the polypi will come away without causing a great deal of pain. You can bring the pain to a minimum by painting the parts to be attacked with a solution of cocain. The method to be adopted to-day will be to pass a snare through a canula, carry it up to the polyp, guide it as far as possible along the pedicle, and then tighten the snare; probably Dr. Jones. who is now operating in this manner without cocainization, will cut through the growth, but I prefer to twist the snare around just as I would the forceps, and to pull it away, a procedure that brings away a portion of the pedicle and also probably a portion of the mucous membrane from which it arises. If this is done there will be no recurrence. The parts are then to be cleansed of blood and you go on and on, so far as possible, attacking the remaining growths until you get away all that is possible. These tumors are hygroscopic and swell up during wet weather. If the pedicle from which you take the polyp is left, it is better to cauterize it so as to destroy the point of implantation. An electric cautery is the best, but if not this, silver nitrate, chromic acid, or any other cauterizing agent you are accustomed to using, will do.

There is a dirty method of destroying polypi which is often successful. I do not want you to resort to it unless you have no instruments, although it is a very simple one. It consists in the injection with a syringe, of the tincture of the chlorid of iron into the parts, as near as possible in the pedicle. The polyp drops off in a few days, and it is usually blown out of the nose by the patient. The iron makes more or less of a magma and you have some trouble getting rid of it. I find that injections of weak solutions of alcohol and distilled witch-hazel also tend to repress the disposition to reproduction of these growths.

Occasionally these polyps are found on the upper turbinated bone, occasionally on the lower turbinated, rarely upon the septum; but in the majority of cases they are found on the lower surface of the middle turbinated bone, so that you will be more likely to strike them there. Sometimes they are far back and then you have to operate through the mouth with the aid of the mirror. It is much better to perform operations in dry than in wet weather. While I have been talking Dr. Jones has removed three polypi, which I pass around; on one you see the pedicle and a portion of mucous membrane. That polyp will not recur.

V AND VI. LYMPHOID ENLARGEMENTS AT THE VAULT OF THE PHARYNX.

We have here two cases of lymphoid enlargement in the pharynx, or as they are commonly denominated, adenoid growths. When in the streets you will notice a great many children and some grown people presenting a peculiar facial expression, with the mouth open and the nose compressed. Being unable to breathe through the nose, they breathe through the mouth. This produces a dryness of the throat and more or less soreness. We find in these cases that the lymphoid tissue existing naturally in the vault of the pharynx is hypertrophied This lymphoid tissue is the same as that of the tonsils, the glands of Peyer in the intestine, and certain glands at the base of the tongue. When this structure is slightly inflamed and in a state of hypersecretion, masses of mucus trickle down over the pharynx, and we have the condition known as nasopharyngeal catarrh, which is often nothing else than chronic inflammation of the lymphoid tissue at the vault of the pharynx, the third tonsil as it is sometimes called, or Luschka's tonsil. This structure has been known for many years. The best preparations I have ever seen were made by the famous anatomist Hunter, more than one hundred and fifty years ago, and can be seen in his museum at Glasgow or Edinburgh, I forget which; but it is only recently that we have recognized the morbid condition to which I direct your attention. Sometimes the patients are unable to hear well, and have pain in the head. Sometimes they are unable to concentrate their attention on their work. Sometimes we have a general hypertrophy of this tissue and in the central portion a depression filled with mucus. There is another form in which there are vegetations, sometimes covering the posterior nares so as to interfere with breathing, or covering the orifices of the Eustachian tubes and interfer-

ing with hearing. When they are pressed upon by the fingers they feel like a mass of worms. There is no medical way of treating them. All patients with growths of this kind are much improved by giving them internally iron iodid, or hydrated calcium chlorid. At the same time these growths should be removed. This is best done with the forceps. Pass the instrument up behind the palate, open the blades, close them so as to seize the mass, turn and pull. Or you can use forceps with cutting edges and cut the growth away in mass or piecemeal, as will be done for you by Dr. Jones in another case now being etherized. In some instances, as we shall do here, the growths are felt for with the finger, and if they are soft they can be scraped away in a great measure by the finger during the examination, as it were. Sometimes these growths bleed very much when removed, and you must be careful as to the position of the patient. I am not in the habit of using a systemic anesthetic, no matter how young the children are, unless there be an extreme nervousness which cannot be overcome, and there be urgent need for hurry. In many cases I do not even have to use cocain. The patients assure me that I do not hurt them. The growths are not sensitive. The pain experienced in their removal is produced by the physician running his instrument up against the vault of the pharynx and scraping it in his movements, a procedure which is very painful. In hospital practice we cannot take the time to do things as cleverly and neatly as at home. You must remember that blood does not run up hill, and that therefore the head should be depressed lower than the shoulders. Should you operate after the method of my friend Dr. French, of Brooklyn, give ether, wrap the patient in a blanket, put him in a chair which is to be tilted backward, and have him held. Keep the mouth open with a mouth-distender. With a mirror, throw in the light, and then pass up the forceps, in the same manner as I do, without the resort to ether. Be careful that the blood does not run down the pharynx into the air-passages. If there is a great disposition to bleed, have the patient turned over sidewise, and see that the head is lower than the shoulders. In some cases we throw the head entirely back over the edge of the table, and in that way the blood runs out of the nose and mouth of the patient, and does not get into the windpipe. After-treatment is rarely required, but sometimes there is some secondary hemorrhage.

It is wonderful the amount of relief gained by these procedures. Stunted children will sometimes grow more in a year after their respiration has been relieved, than they formerly did in three or four years. I read an account a day or two ago in the *London Journal of Laryngology*, of a lad of seventeen who was but five feet three inches in height, and light in proportion, while his brothers were six feet in height and proportionately heavy. Some hypertrophied adenoid tissue was removed from the pharynx and his large tonsils excised by Mr. Jakins, who reports that two years afterward the patient was brought to him, being five feet ten inches in height and weighty in proportion. That was a marked case. I have told many times the parents of a miserable puny child that it would become so much improved in appearance in a short time that even distant members of the family would hardly recognize it if existing pharyngeal adenoids were removed, and in a few months the prediction was verified.

The causes of these growths are not known. I believe that they are usually congenital. Properly removed they never recur. The oldest cases operated on by me with cutting forceps occurred in 1870, in two sisters who have long since grown up, and when I heard from them a number of years ago there had been no recurrence. Other cases I have seen at intervals of ten and fifteen years or more after operation, and there has been no recurrence. In order to be sure that you have taken everything away you must, some time after the operation has been performed, examine the parts carefully with your finger and with the rhinoscopic mirror.

CLINICAL MEMORANDA.

A CYSTIC TUMOR OF THE BLADDER IN A STILLBORN CHILD.

BY W. L. RANSOM, M.D.,
OF ROCKFORD, ILLINOIS.

I WAS called at 4 A.M., August 24, 1893, to attend Mrs. B., in confinement at full term. She was a well-formed, healthy primipara, twenty-two years of age. Nothing had transpired to mar the normal progress of gestation as far as she knew, save a little fright produced by a flying squirrel during a visit in a neighboring city in the second month. The animal sprang upon her hand as it rested on her lap, startling her greatly. This incident, however, made no great impression on her mind and speedily passed away.

Premonitory pains began at midnight and parturition progressed favorably and rapidly, notwithstanding the absence of amniotic fluid. The birth of the child, a female, was completed at 6 A.M., two hours after my arrival.

Motion had been felt distinctly up to the last month of pregnancy, the mother said, but had become less and less noticeable during the last four weeks.

After the head had been expelled there seemed to be an obstruction of some sort preventing the exit of the remainder of the body, and considerable force was required to extract it, the perineum being considerably and unavoidably lacerated.

The funis was about the neck of the child, but when released she made no cry; nor, indeed, was there any indication of attempted respiration.

As long as the cord continued to pulsate, efforts were made to initiate the respiratory act. These were continued for about half an hour without the slightest result or impression. The child never breathed or seemed to make any effort to breathe, as though this power were absent entirely.

In the hypogastric region I noticed a tense, elastic protuberance of considerable dimensions, which must have been the cause of the difficulty experienced in the final stage of delivery, and I was forced to conclude that this tumor had to do with my failure to induce respiration.

The funis having ceased to pulsate, I separated the little one from its mother and proceeded to make a thorough examination of the body. The child seemed to be fully developed and well formed, weighing nine

pounds. There was a deformity of the right ear, the pinna having a peculiar backward-pointed form, as though a point in the upper third of its posterior margin had been forcibly drawn backward, giving rise to a lancinate appearance of this appendage.

As already mentioned, the hypogastric region was greatly distended by an elastic tumor which seemed to fill all of the abdominal space between the sternum and the pelvis, but was especially prominent and projecting in its median line near the umbilicus.

My first incision extended from the pubic region to the sternum, directly over the most prominent portion of the tumor. On opening the peritoneum I found that nearly the whole abdominal cavity was occupied by a multilocular cystic tumor. It seemed to spring from the pelvis, to which it was firmly attached by means of three large firm processes of fibrous tissue, which severally continued beyond or through the pelvis to the inner aspect of both femora and to the front of the pelvis, forming in these locations considerable tumors.

The abdominal tumor was fully as large as the child's head. By its anterior aspect it was firmly adherent to the mesial line of the abdominal wall; in all other directions it was non-adherent, save at its point of origin in the pelvis.

It consisted of one small and three large cysts in one structure, but not communicating with each other. The small cyst was about the size of a hickory-nut, had thin fragile walls, and was filled with a creamy fluid. The large cysts had thick and tough walls and were distended with liquid, a portion of which resembled clear, and the rest turbid, urine.

On further inspection the left kidney was seen to be as much as ten times larger than the normal one on the right side. The pelvis and its calices were correspondingly dilated. The ureter was at first glance mistaken for the descending colon, such was its size; passing from the kidney it terminated in the posterior wall of the most inferior of the three large cysts. From this and from the appearance of the contents of the cysts, I concluded that this interesting tumor must have been of vesical origin. The descending colon and the rectum were nowhere constricted; meconium was observed to pass shortly after delivery.

The external genitalia (those of a female) were normal in size, position, and general appearance. The external orifice of the urethra was patulous, but a short distance within the passage was occluded, apparently from the external pressure of the extraneous tissue belonging to the tumor. The urethra was not impervious, for a probe could, by gentle force, be made to insinuate its way past the constriction into the lowermost of the three compartments of which the tumor was composed. The urethra was, however, practically a closed passage, the constricting fibers of this growth being sufficiently rigid to prevent the evacuation of the contents of the tensely distended bladder.

No vestige of the internal organs of generation was found.

Passing to the liver, I found it also to be of unnatural size, pushing its way above the tumor far up into the thoracic cavity.

Extending my incision upward along the left side of the sternum to the clavicle, I found the heart also to be greatly enlarged, but there was no lung-structure to be found in the thorax, save minute strips of lung-colored tissue packed away in the uppermost recesses under the clavicles. I no longer wondered at my futile efforts to induce respiration. The tumor, liver, and heart had crowded up and prevented the development of the less resistant lung-structure.

TOXIC SYMPTOMS FROM SEIDLITZ POWDERS.

By J. S. TRIPLETT, M.D.,
of Harrisonville, Mo.

Not long ago I called upon a physician who was convalescing from an attack of malaria, and while in conversation he related an attack of severe vomiting and retching and depressing after-effects following the ingestion of a Seidlitz powder. The depression was so marked that he feared a fatal termination, and medical aid was summoned. Emesis was provoked by titillating the fauces with the finger, when severe vomiting and retching ensued for some time, after which the functions gradually but slowly became normal. The powders were not thought of as having been the cause of the trouble, although the man said that they tasted differently from any he had previously taken.

In the same house was a young man, a relative of the physician, who was also sick and was ordered a Seidlitz powder, but took only half of the powder in solution. In ten minutes violent vomiting and retching set in, with cramps in the stomach and a burning sensation in the esophagus, together with a feeling of general depression. This man was able to go about his business in a few days.

Two or three days later, at night, I was called to see A. D. R., about thirty years old. I responded at once, and found the patient in bed, vomiting and retching at intervals of eight or ten minutes, with moist skin, slow and weakened cardiac action, and as he expressed it, "so sick he did not know what to do." Nausea was very marked. The femoral adductors were cramped, and the man spoke of a repeated desire to defecate. The voice was somewhat subdued. The result of my examination did not account for his condition, and I set about getting more facts. On inquiry, I learned that the man had been feeling badly all of the afternoon, and on returning from his work got a Seidlitz powder, ate supper, and then, at about 8 P.M., took the powder, with the results related.

Remembering the other two cases, my diagnosis was now clear. The next morning I went to the drug-store from which the powder was obtained, and, on inquiry, found that the powders taken by the physician and the young man were also purchased at this store. I related the cases to the druggist; he could not account for the symptoms, as he said that he had compounded the powders according to the U. S. P.

The blue paper was obtained from a printing-office, and he thought that possibly the untoward effects were due to arsenic in the paper. I obtained one of the powders for qualitative analysis, and on passing H_2S gas, generated in Marsh's apparatus, through the contents of the blue paper, dissolved in four ounces of pure water, a heavy, orange-colored precipitate of Sb_2S_3 (antimonious sulphid) was thrown down. The presence of so much

antimony explained the alarming symptoms in the three persons who took the powders.

In all probability the mistake was made in compounding the powders, antimoni-potassic tartrate being used instead of potassium bitartrate.

MEDICAL PROGRESS.

The Importance of Early Attention to the Disability Caused by Infantile Paralysis.—At a recent meeting of the New York Academy of Medicine DR. A. B. JUDSON raised the question whether patients disabled by infantile paralysis should not be submitted more entirely and more early to orthopedic treatment. After the child has passed through the stage of onset, and ergot, electricity, and massage have produced their legitimate effects, after the lapse of perhaps eighteen months, the remaining deformity is often found upon analysis to be rather a disability. For example, in a case in which the knee cannot be completely extended there is no deformity when the patient is sitting, but when he stands up the apparent deformity is due to an inability to extend the knee. It would have been easy to have prevented contraction of the hamstrings by providing for their repeated elongation by complete extension of the knee. Cases sometimes occur in which shortening of the tendons begins, in a manner not well understood, at a very early stage, before simple desuetude can be fairly charged with being the cause of the mischief. Thus it is that the prevention of muscular and tendinous shortening should receive attention on the part of the early observer of the case. Thus if the knee is kept extended when walking is attempted, not only are the muscles and tendons kept in normal elongation, but the general welfare of the limb is assured. If the knee is stiffened mechanically the pressure of the weight of the body in standing and the repeated concussion of the limb as the foot strikes the ground in walking and running will improve the tardy circulation; but beyond this, and better than this, will be the development of unused muscular fibers and special groups of muscles, by whose action important motions will be acquired which would have been impossible if the limb had remained in suspension. In order to keep the knee firmly extended under the weight of the body in standing and walking, and to give use and development, as far as may be, to the fragmentary muscular system of the limb, suitable apparatus is required. A good general rule in the treatment of deformity in a growing child is to keep the part as nearly as possible in the desired shape as much of the time, day and night, as is practicable, so that the increment shall be on the right side of the dividing line between the normal and abnormal. Not only should the part be kept in as nearly the normal shape as possible, but it should also be given as wide play to the functions of motion and weight-bearing as the crippled condition of the limb will allow. From the very earliest attempt to walk or to make use of the muscles and joints which are imperilled by the cord-lesion, extraneous assistance should be afforded. It should not be said, off-hand, that the child is too young. The first and repeated question should be: Is the child not yet old enough, or is he not already giving sufficient evidence of a desire to make use of the questionable muscles and joints to make assistance desirable or necessary? When efficient treatment is begun it is easily continued. The process is slow and prosaic, but the benefit cannot be overestimated.

Intra-intestinal Injections of Hot Water for the Relief of Shock, Particularly from Hemorrhage.—RUTHERFORD (*Rhode Island Medical Monthly*, vol. i, No. 9, p. 458) has reported the case of a boy, nine years old, who was accidentally shot in the thigh. There was not much bleeding from the wound, but the leg soon became badly swollen and discolored. Examination showed that the swelling and discoloration arose from an extravasation of blood into the tissues, and it was decided to cut down upon and tie the bleeding vessel (the femoral artery), as the almost bloodless condition of the boy forbade the performance of amputation. In the course of the anesthetization the pulse began to grow weaker, and doubts were felt as to the possibility of proceeding with the operation. In the hope of stimulating the patient a quart of hot water containing a small quantity of salt was pumped into the rectum by means of a catheter introduced deeply and connected with a Davidson's syringe. The pulse at once grew stronger and the skin assumed a more healthy appearance. The pulse again weakening after the lapse of fifteen minutes, two quarts of hot saline solution were injected into the rectum, the tube being introduced for a distance of seventeen inches. The presence of the fluid in the bowel caused an appreciable fulness of the abdomen, which rapidly subsided as the fluid was absorbed. Toward the completion of the operation an injection of two quarts of water had again to be made, the tube being introduced for a distance of twenty-three inches. The pulse now became strong, and the patient presented a better appearance than at the beginning of the operation. He lived for fourteen days, ultimately dying from septic infection and exhaustion consequent upon gangrene.

Intra-uterine Infection of the Fetus with Enteric Fever.—JANISZEWSKI (*Münchener medicinische Wochenschrift*, 1893, No. 38, p. 706) has reported the case of a woman, thirty-five years old, who aborted in the third week of an attack of enteric fever in the eighth month of pregnancy. The child died in the course of five days, and upon post-mortem examination numerous consolidated areas about as large as hazel-nuts were found in both lungs, together with slight enlargement of the spleen. The connective tissue in the neighborhood of the esophagus presented several hemorrhagic infiltrations. The remaining organs displayed no appreciable lesion. Inoculations of culture-media with sections of tissue from lungs, spleen, kidneys, a mesenteric gland, and a portion of the ileum near the ileo-cecal valve, all resulted in the development of organisms that corresponded in size and form with the typhoid-bacillus of Ehrlich, and which presented characteristic appearances by further cultivation upon various nutrient media.

Traumatic Rupture of the Heart.—O'BRIEN (*British Medical Journal*, No. 1711, p. 843) has reported the case of a woman who fell from the side of a ship a distance of eight feet into the water, coming into contact with the propeller of the vessel, which was in motion. Removed from the

water and conveyed to a hospital, life was found extinct. The face was blanched, and the general bloodless appearance of the body suggested death from internal hemorrhage. In the left pectoral region was a patch of ecchymosis, with a transverse fracture of the sternum at a point midway between its articulation with the fourth and fifth costal cartilages. On more careful examination the gladiolus was found to be fractured, the pericardium lacerated, and the heart ruptured through both ventricles.

THERAPEUTIC NOTES.

Malakin is the name of a new synthetic product of the laboratory for which anti-rheumatic, antipyretic, and anti-neuralgic virtues are claimed, without the dangerous secondary effects that have been observed to attend the use of some of the other drugs of the same class. The product is allied to phenacetin, being the salicyl-derivative of paraphenetidin, and may be designated salicyl-phenetidin. It appears in the form of small, light-yellow, fine needles that melt at a temperature of 197.6° F. It is insoluble in water, with difficulty soluble in cold alcohol, but fairly soluble in hot alcohol. It is insoluble in alkaline carbonates, but dissolves with a yellow color in sodic hydrate, forming a sodium-combination. Dilute mineral acids decompose the body, with the formation of salicyl-aldehyde and paraphenetidin. Experiments upon animals demonstrated not only that the drug exerts no depressant effect upon the heart and the circulation, but also that it has an antipyretic action. The drug was next tried in fourteen cases of acute rheumatism, including a number of severe cases, and in every instance with good results. It was given in doses of from 60 to 90 grains daily. The drug was administered in 48 febrile cases, including 13 of enteric fever, 7 of croupous pneumonia, 19 of various types of tuberculosis, 7 of erysipelas, and 2 of scarlatina. In several cases the temperature was not notably influenced. In the majority the decline was gradual and not excessive, and unattended with sweating. The drug acted well in 12 cases of neuralgia and headache. The following conclusions have been reached: 1. Malakin is an agreeable and certain remedy in the treatment of acute articular rheumatism, and has the advantage of being free from unpleasant secondary effects; so that it may be advantageously substituted for salicyl-preparations in susceptible patients (women and children), and in cases in which there is an idiosyncrasy to salicylic acid. 2. The drug acts slowly and gently as an antipyretic, without giving rise to alarming symptoms, so that it may well be administered to debilitated patients and to those with impaired or defective circulation. 3. It may be given for a long time without injury in cases of neuralgia and habitual headache.

Parenchymatous Injections of Salicylic Acid for Inoperable Carcinoma Uteri.—Having been struck by the peculiar affinity of salicylic acid for epithelial cells, BERNHART (*Centralblatt für Gynäkologie*, 1893, No. 39, p. 900) was induced to employ the drug in cases of inoperable carcinoma of the uterus. He used a 6 per cent. solution of the acid in 60 per cent. alcohol. A special form of syringe was employed, with a curved hollow needle of small caliber. Not more than half a dram was injected at every sitting, a few drops being introduced in from seven to ten different places. The sittings were repeated at intervals of three or four days. The results were rather encouraging, notable retraction taking place at the site of injection, while after a number of injections had been made a favorable influence upon the amount and odor of the discharge, upon the pain, and upon the hemorrhage was observed. When ulceration existed cicatrization was stimulated. In some patients the injection caused a certain amount of transient pain, and in some it was followed by slight elevation of temperature.

For Gonorrheal Vaginitis.—The vagina is first cleansed with cotton, then irrigated with a 1 : 1000 solution of mercuric chlorid, and the vaginal vault is packed with tampons saturated with the following solution:

℞.—Potassic hydrate	0.20
Methylene-blue	10.
Alcohol	15.
Distilled water	200.—M.

The vagina is then filled with dry tampons. After two days the packing is removed, and the vagina is irrigated with a 1 : 1000 mercurial solution. Two glycerin tampons are now introduced, and replaced by fresh ones a day afterward. The treatment is completed by irrigations and dry tampons continued for another week.—D'AULNAY, *Bull. Gén. de Thér.*, No. 18; *Wiener med. Presse*, No. 39.

For Pernio.—

℞.—Zinci oxidi crud.	15.
tere exactissime direct. cum	
Glycerini	45.
adde	
Lanolini	40.—M.
Ft. ung.	

S.—Apply nightly. An application can be made also by day, the excess being removed with a cloth.—STERN, *Ther. Monatsh.*, No. 8; *Wiener med. Presse*, No. 36.

Large Doses of Oil for Lead-colic.—From a small series of observations, COMBEMALE (*Gaz. Méd. de Paris*, 1893, No. 38, p. 447) concludes that given in doses of about six ounces at a time, olive oil acts as a deobstruent and sedative in cases of saturnine colic. In order that such quantities be retained, the sensibility of the stomach should be obtunded by the previous administration of cocain, menthol, or other local anesthetic. Given daily in a dose of two ounces the oil causes subsidence of the nervous symptoms.

For the Night-sweats of Pulmonary Tuberculosis.—

℞.—Acid. salicylic.	ʒjss.
Glycerin.	fʒiij.
Alcohol.	fʒiv.
Aquæ destil.	fʒj.—M.

S.—Thirty drops hypodermatically at bedtime, four or five nights in succession.—BERNHEIM, *Sem. Méd.*, No. 38; *Prager med. Wochenschr.*, No. 37.

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CHILDREN OF THE STATE.

THE expense of the care of the defective classes is becoming enormous and burdensome. The criminals in the United States, while in prisons and reformatories, cost fifteen millions of dollars a year. The other defectives cost a sum not possible to calculate, though we may safely say that it is very large. From no other class of society are the defectives recruited in such large numbers as from "the children of the street." These neglected products of modern civilization are from necessity petty thieves, beggars, and sympathy-mongers. They graduate into every class of vice and crime, and, at the best, become a serious menace to the physical, mental, moral, and commercial interests of society.

Sentimentalism, religious enthusiasm, and pseudo-charity have perpetuated the monastic idea in the orphanage. Children have been and are huddled together in cities and towns, and supported, washed, fed, and drilled, doctored, and amused, with a mortality of 200 or 300 per 1000 a year, all in the name of charity. The children that have once tasted liberty prefer the drygoods box to the white-counterpaned bed and its attendant institutional life. They prefer gutter life and freedom, to clean clothes, baths, steam-heated rooms, balls, bats, and croquet, inside stone walls, even though garnished with a half-week of well-supervised and orderly maneuvers under trees, by the side of rivers and brooks, in a strange, clear light and air. The dreadful death-rate in these orphanages, the loss by runaways, and the loss of incorrigibles sent back to the street, make altogether a pitiable showing.

From this extravagant and heart-rending picture we turn to Australia for hope—a continent without an orphanage—a country without an orphan. The good work of two women, in a rational and plastic state, has found a home and parents for every orphan. Each waif is taken to a receiving home, where it is cared for until a country home is found. The local volunteer societies canvass their neighborhoods, and send to the central *Children's Committee of the Destitute Board* the names and circumstances of such families as they have found where children may be placed. The children's committee selects that home which it judges best adapted to the development and care of the child in question. The foster-parents receive a stated sum each week for the care of the child and for proper clothing. This sum averages $1.25 per week. No child is placed in a family that is too poor. In such families the child might suffer hardship. When of school age the child must be in school. The schoolmaster makes a quarterly report to the children's committee of the attendance and general condition of all children of the State. The schools of Australia have no long vacations. The police-officer visits the child at definite intervals. The local volunteer committee looks after its care and culture, and jealous neighbors often lend a hand in watching the growth and education of these happy children, and reporting their findings to the children's committee in anonymous letters. The village health-officer also reports on any sickness he is called upon to treat, and an inspector of the committee visits every child twice a year.

When the child is fourteen years old he begins to work, usually on the farm on which he has before lived. His earnings are placed in the Postal Savings Bank, and at seventeen or eighteen he goes out into the world for himself, an independent man. The State, at an expense of less than seventy dollars a year, has raised a man or woman to contribute to its aggregate wealth, and prevented the manufacture of a criminal, the subsequent ravages of his art, and the expense of court, prison, and reformatory for him and his pupils. The hysterical activities of the charity-mongeresses have incidentally been

avoided, and their energies diverted to occupations less destructive to life.

When a mother, with the help of a half-ration from the Destitute Board, can keep her child and a roof over her head, disregarding the bugbear of out-door relief so potent with us, this ration is granted. When she has two children, one ration is given, and a ration and a half for three, and so on. Babies are placed out where they are cared for by experienced country mothers, and only one or two in a place. The foster-mother is paid more for its care during the first nine months of infant life than afterward. Old people are cared for in the same humane manner, and our Southern continental civilization is not disgraced by institutions in which old people are huddled together in lifeless and childless prisons to wait for death.

It may seem strange that Australia, Tasmania, and New Zealand have so far outstripped us in this humane, charitable, and economic work of child-saving and the prevention of disease. In our cities the slaughter of children in "institutions" still goes on, the growth of our defective and criminal class still increases, the calls upon the thrifty and humane still grow importunate, but we are unwilling to learn. It were better to recognize at once that as civilization advances the functions of the State must advance into new fields. The care of the children can no longer be left to the church and the street. As society represented by the State must protect itself against enemies from without, so it must protect itself from the greater enemy that it is suckling within. It is unnecessary to point to the influence upon general morality which the daily observation of the life of the children of the street exerts upon the more fortunate. This depressed moral tone makes our political corruption possible. Hope lies not in restricting, but in extending political activity.

Two women, MISS CLARK and MISS CATHERINE SPENCE, destroyed the orphan-asylums of Australasia, robbed the continent of its orphans, and saved these colonies from a horde of criminals and dependents. Some good man or woman must raze every orphan-asylum and "home" in the United States to the ground. We have outlived them. We are too thrifty to keep them longer, pretending to perform a function they cannot fill.

The Children's Aid Society of Philadelphia has begun in the right way. Help it to extend its aid to all the waifs of Pennsylvania.

This is a proper work for the physician, and through the activity of our profession in preventing and curing the diseases of the State, we may hope that the standing, reputation, and good name of the doctor will be restored and properly honored.

MEDICINE AND STATE RIGHTS.

THE question of State rights is about as *living* to-day as ever in the history of this country. It comprehends, along with other things of divers complexions, the care of the general health. A suggestion of the complications that may arise in connection with this subject was furnished not many months ago in the East when an invasion of cholera was threatened. Within the past year there have been a number of adjudications on the authority of States to regulate the admission of articles of food. Now there comes a decision from the United States Circuit Court, W. D. Michigan, in the case of the M., St. P. and S. S. M. Ry. Co. *vs.* Milner, just reported (57 Fed. Rep., 276), of no little interest, touching upon State quarantine. The railway company brought suit to restrain the Michigan State Board of Health from enforcing the State Quarantine regulations, on the ground that the board was daily detaining and attempting to detain passengers on the Canadian Pacific Railway, with which it had a traffic arrangement, and prohibiting their entering the State until they had undergone the quarantine detention, and until the disinfection of their baggage. It was also complained of that this detention, examination, and process of disinfection of baggage was applied to all emigrants, irrespective of whether they came from an infected or healthy locality abroad, and without regard to their point of destination, and notwithstanding the fact that all of such emigrants and travellers had been, before such detention, inspected by United States officials detailed for the purpose. The rules and action of the Board of Health, it was contended, were in direct violation of the Constitution of the United States, in that they attempted to regulate and prohibit commerce with foreign nations, and were likewise in violation of an existing treaty between the United States and Norway and Sweden. The court, however, overruled the motion for a preliminary injunction, justifying its action by the application of established decisions. CHIEF-JUSTICE MARSHALL, one of the most distinguished jurists ever on the Supreme bench, recognized, it said, that the removal or destruction of infectious or

unsound articles was undoubtedly an exercise of the police power of the State, and an exception to the prohibition resulting from the exclusive power of Congress to regulate the operations of foreign and inter-State commerce, and that laws of the United States expressly sanction the health-laws of the several States. And Chief-Justice Taney expressly declared that "It must be remembered that disease, pestilence, and pauperism are not subjects of commerce, although sometimes among the attendant evils. They are not things to be regulated and trafficked in, but to be prevented as far as human foresight or human means can guard against them."

Both of these decisions have since been referred to with approval by the Supreme Court itself, in a case in which the distinction is drawn with great clearness and force between the exercise of its police power by a State and an attempt to legislate upon matters of inter-State or foreign commerce, which are exclusively within the power of the Federal Government. Moreover, attention was called to the fact that the Quarantine Act of Congress, approved February 15, 1893, expressly recognizes the validity of State laws, and in Section 3 requires the Supervising Surgeon-General of the Marine-Hospital Service to coöperate with and aid State and municipal boards of health in the execution and enforcement of their rules and regulations. Nor could the Court find anything in any existing treaty with Norway and Sweden in conflict with the institution or enforcement by any one or more of the States of this Union of quarantine-regulations. To the objection that passengers from non-infected countries and localities were detained, the answer was made that such detentions were, in the nature of the case, to a certain extent unavoidable; and passengers from such countries and localities might have become properly subject to detention by reason of having mingled with others who could communicate pestilence or disease to which they themselves had been exposed or subjected. An opportunity for examination and inspection was indispensable also. The objection that passengers who had certificates from United States inspectors were detained was also held not tenable. The States may exercise their police power according to their own discretion, and by means of their own officials and methods. The inconvenience resulting to emigrants and travellers from being halted and subjected to examination and detention at State lines is of trifling importance at a time when every effort is required, and is being put forth, to prevent the introduction and spread of pestilential and communicable diseases. Lastly, it was held that the costs and charges which were incurred in such quarantine-inspection might lawfully be imposed on the railway company as being incident to the business in which it is engaged.

SUCCESSFUL CELIOTOMY FOR PERFORATED GASTRIC ULCER.

It is evident that the possibilities of antiseptic surgery have not been exhausted. To the numerous life-saving operations born of the present surgical era is to be added that of abdominal section in the treatment of perforation of the stomach secondary to ulceration. In spite of a certain amount of indiscriminate and perhaps unnecessary operation, there can be no question that many lives have been saved and much suffering averted by reason of the comparative safety and facility with which abdominal section can be performed if aseptic and antiseptic methods are followed. There are already on record a few cases of perforation of the bowel in the course of enteric fever in which life has been saved by promptly opening the abdomen, closing the rent in the bowel, and cleansing the peritoneal cavity.[1]

Another step in the same direction has recently been made, in that Barling (*Birmingham Medical Review*, vol. xxxiv, No. 181, p. 129) reports the successful treatment by celiotomy of a case of gastric ulcer with perforation and peritonitis. The same treatment had been previously pursued in two other cases, but with an unfavorable outcome.

The first case was one of latent gastric ulcer in a girl, twenty-two years old, presenting symptoms of peritonitis, in which the abdomen was opened six hours after the onset of the acute manifestations. The source of perforation could not be found at the operation, and death took place twenty-four hours afterward. Upon post-mortem examination, a perforating gastric ulcer was found on the anterior wall of the stomach, rather nearer the cardiac than the pyloric extremity.

The second case occurred in a girl, twenty years old, with a previous history of gastric ulcer. Symptoms of peritonitis developing abruptly, the possibility of perforation was considered, and the

[1] See Weller van Hook, The Medical News, November 21, 1891, p. 591.

abdomen was opened. At about the middle of the anterior wall of the stomach an opening, with indurated margins, was found. Five Lembert sutures were introduced with a good deal of difficulty, and the abdomen was flushed and closed and drainage provided for. Death took place thirty hours after the operation. Upon post-mortem examination, well-marked peritonitis was found, especially in and around the portal fissures, and about a pint of thin purulent fluid escaped from the cavity of the abdomen and pelvis. The perforation on the anterior wall of the stomach was effectively closed by the sutures, and adhesions had formed between the opposed peritoneal margins. A second ulcer, which had almost perforated, was found on the posterior wall.

The third case occurred in a domestic, twenty-nine years old, who was seized with abdominal pains, faintness, and vomiting. She had previously suffered from epigastric pain and vomiting, though there had never been hematemesis or melena. The acute symptoms had set in a day after the ingestion of a heavy meal, with a feeling as of something having given way within the abdominal cavity. Indications of peritonitis soon appeared, and a provisional diagnosis of perforation of a gastric ulcer was made. Under appropriate treatment the girl did fairly well for a number of days until pain was complained of in the left hypochondriac and lumbar regions, soon followed by the appearance of a swelling in the left hypochondrium. Under further treatment the symptoms again receded for a time, when, the condition of the patient appearing precarious, it was decided to perform abdominal section. An incision was made over the swelling in the hypochondrium and a small abscess-cavity found behind the stomach and evacuated. The patient doing badly after the operation had been in progress for about ten minutes, a drainage-tube was introduced into the abdominal cavity and the wound was speedily closed. Rather contrary to expectation, the girl did well. The progress of the case was complicated by the successive development of phlebitis in both legs, but recovery ultimately ensued.

Such a result as this, in connection with a condition that under any other plan of treatment is almost certain to be fatal, is, to say the least, encouraging, and adds new laurels to the credit of modern surgery and modern surgical methods. The wisdom of first passing a drainage-tube into the stomach through the orifice of perforation and evacuating any fluid present is pointed out, and considerable importance is attached to the employment of two tubes for drainage, the one placed *in situ* close to the perforation, the other introduced into the abdomen just above the pubes.

EDITORIAL COMMENTS.

The "Substitutor" and the Testimonial-writer. — A widely-spread advertising circular of a proprietary drug-preparation presents a picture of the substitutor cheating the father of a dying child. The father comes asking for the advertised cure-all. The substitutor is a drug-clerk with devilish leer, satyr ears, and mephistophelean horns. The legend given therewith is as follows:

We present on the opposite page a photograph of a modern nuisance of the vampire order. The smile on his infectious and brazen face poisons the very atmosphere as does the hated lupus tree, and his presence is the *shadow* of *death*. Unfortunately for the sick and the dying, this incarnation of evil lurks in drug-stores of doubtful reputation, and practises his arts and wiles upon his innocent and unsuspecting customers. In the picture before you a father has come in haste for a special remedy for his sick child. The mother, whose soul is filled with anxiety, is impatiently waiting his return with the medicine for her precious darling. The substitutor replies that he is out of it, but has something "just as good or better."

The parent hesitates, time flies, he is over-persuaded, he grasps at the substitutor's nostrum, and the chances are that the little one is doomed. The vampire substitutor lives upon the death of his victims. Is there any abyss too deep, any punishment too severe for the miscreant who will thus trifle with human life and love for the smallest gain? Room for the leper, room.

The literary and ethical excellencies of this remarkable product of the professional advertisement-writer are on the same level. If the substitutor's face is infectious, why doesn't the poor dupe catch the disease (of scoundrelism), and in the interests of dermatology we would like some further information about the "hated lupus tree."

But the laughter excited by this execrable stupidity is quickly transformed to disgust and indignation when it is remembered that not even the mephistophelean substitutor would ply his "vampire's" trade on the poor father if the poor father had only brought a physician's prescription. Would the sensible father of a dying child go to a drug-store for a "special remedy," or would he go to a physician? The advertiser's pamphlet is equal to the emergency—but only by implication, its most prominent claim being the published "testimonials of six thousand well-known physicians." Among these we notice two presidents of the American Medical Association, surgeon-generals, professors and professors, and professors, doctors galore, and fellows with as many as thirteen alphabetic titular tin-kettles to their tails, "M.R.C.S.I., L.R.C.P.I., L.S.A.," etc., world without end. Amen!

The Doctor in Politics.—It seems that in Buffalo, N. Y., things have reached such a pass, or such an *impasse*, that indignation has broken down the confines of

"schools" of medicine, broken down party-lines, and even broken down the natural disinclination of physicians to confine themselves to professional matters so far as public action goes. A despatch reads:

Both schools of medicine were represented at a meeting of the most prominent physicians in the city at the Academy of Medicine last night in the interest of good government. After speeches denouncing machine election-methods in this city, the doctors, with one or two exceptions, agreed to do everything in their power to influence their patients in behalf of good government, and adopted emphatic anti-machine resolutions. Still more unusual was this final resolution: "*Resolved*, That in so far as is compatible with our professional obligations we offer our services as watchers at the polls."

In Ohio the physicians, led by the noble enthusiasm of Dr. Culbertson and the *Lancet-Clinic*, are aroused and have gotten pledges from many of the candidates that they will, if elected, support the attempt to get a Medical Practice act passed by the Legislature. In no civilized country has the medical profession been so insulted and outraged by the hordes of quacks as in the past years in Ohio. We hope an end has been begun.

The Medical-belt Humbug in England was doing a thriving business. Owing to the usual complete control of the newspaper press by the quacks, through the bribery of the advertising department, it is a marvel that the *Pall Mall Gazette* should have taken up the exposure of the wretched fraud. But it did so, and was, of course, promptly sued for libel. But the humbug collapsed rather than meet the exposure of its affairs in court.

The shamelessness of the manager is shown by the fact that while steps were actually being taken to wind the company up, and after he himself had resigned the managership, he wrote to the newspapers proposing a medical commission to examine the company's patents and methods. This proposal was naturally scouted as absurd, as if he did not fear medical or scientific opinion, he could find ample opportunity of proving the efficacy of his belts, etc., by suing the *Pall Mall Gazette*, which openly courted an action for libel.

If there were but a single honest newspaper in the United States, what a field would be open to it! Every one of them is bribed or intimidated.

Lathyrism is the name given by Surgeon-Captain HENDLEY (*Indian Medical Gazette*, September, 1893, p. 300) to a peculiar form of paraplegia, observed only in males, and traceable to the employment of "teòra" or "khasari dâl" (lathyrus sativus) as the sole article of diet. The essential symptoms were weakness of the lower extremities, with tremor and stiffness, exaggeration of the knee-jerks and ankle-clonus. The health was otherwise preserved. Inquiry disclosed the fact that, the ordinary food-crops having failed, the affected community was compelled to subsist almost entirely upon "teòra." It was generally known that large indulgence in the grain for long periods was likely to induce weakness of the legs, and it was said that a similar outbreak had occurred some sixteen years previously. It was also believed that cattle are sometimes affected. An additional interesting fact is that a good deal of the grain had been blackened and diseased by rain. The opinion is expressed that the disease is a form of multiple sclerosis, perhaps in some way related to the exclusive diet of teòra.

The Cost of Carelessness.—On July 31st a vessel, the *Carlo Rizii*, sailed from Naples, bound for Buenos Ayres, South America, with 1400 emigrants aboard. No care had been taken or sanitary examination made as regards the health of these people sailing from a cholera-infected port, and the disease broke out on the ship. The vessel was not allowed to land her contagion-laden cargo, and had to return to Naples again, when it was found that 240 passengers had died of cholera. Another vessel, the *Remo*, had a similar history, with 147 deaths. These 387 deaths are, therefore, to be charged to the criminal carelessness of the officials who allowed the disgraceful embarcation. The people of Buenos Ayres were not cruel. They had learned their lesson from the bitter experience of a few years previous, when the admission of one or two infected ships from the same port cost the people of South America 40,000 lives.

He Instructs the Public in the Name of Medicine.—The climax is reached when "Leslie E. Keeley, M.D." (the "LL.D." is strangely omitted!), through the columns of the New York *Sun* (*par nobile fratrum!*) reviews the history and progress of medicine, discussing seriously the cause of disease and the contributions of science to pathology. The moral of it all is that the profession has always and without exception at first denied and persistently fought every medical discovery finally forced upon it by the intellectual giants of therapeutics. One would like to ask the shrewd proprietors of the *Sun*: 1. How much they received for the two-column advertisement inserted as genuine reading-matter? 2. If not paid for as an advertisement, why they give two columns of their space gratis to one advertiser and charge such a high price for two columns to another advertiser?

Effect of Use of Liquor on Damages Recoverable for Personal Injuries.—The acts of a person suing to recover damages for personal injuries tending to enhance the injury are admissible in evidence to reduce the amount of the damages under the general issue, whether considered as in mitigation or, as a rule, of limitation of damages, says the Supreme Court of Missouri, in the case of Boggess *vs.* Metropolitan Street Railway Company just reported (23 S. W. Rep. 159), and therefore it holds it competent in such an action for the defendant to show that the injury was enhanced by the continued use of intoxicating liquors.

Professor Roswell Park.—Last week we published a selection from our excellent contemporary, the *Boston Medical and Surgical Journal*, bearing on the fatal accidents that frequently occur to physicians as a result of their unselfish devotion to professional duty. As the words were being printed an eminent member of our guild, whom we all delight to honor, Dr. Park, of Buffalo, was most dangerously ill with diphtheria, derived from a patient in the performance of the operation of intubation. We are happy to be able to state that, according to latest advices, Dr. Park is convalescent.

SELECTIONS.

STATE EXAMINATION FOR LICENSE TO PRACTISE MEDICINE.

WE have before us a copy of the law passed by the Pennsylvania Legislature, regulating the practice of medicine in that State. The act is largely modeled after our own State law, but contains some features which we fear may prove a stumbling-block, because of the non-existence of a board of educational control, such as is our State Board of Regents. A medical council, composed largely of State officers, will be the governing body, who are to supervise the examinations, both academic and professional. And just here is where the trouble is likely to arise. If the work of this council is to be rendered effective, the standing of every educational institution in this country, and the regulations governing foreign schools of learning, must become a part of its office files. The appropriation of moneys for all the purposes of the law is but one thousand dollars per year, which sum includes the salary of the secretary and treasurer. The law is to go into effect March 1, 1894, and if those interested are wise they will ask the regents at Albany to place at the disposal of the Pennsylvania Medical Council the records, accumulated during the past one hundred years, which show the institutions whose certificates indicate the completion of a "competent common school education," and also the rating of the many medical colleges in as well as out of the country.

As in this State, there are to be three boards of examiners, representing the three incorporated systems of medicine. In almost every other particular the law follows closely the lines adopted in our State, and many pitfalls will be avoided if the newly-appointed examiners were to make a practical inspection of the workings of the law in New York. If the same harmony which marks the operation of the law in this State obtains in Pennsylvania, we predict great and lasting results as the outcome of this latest step in the advancement of medical science.

Two years have rolled by since the law empowering the State *alone* to grant license for medical practice has been in operation in New York, and the promises of the advocates of the measure have been more than fulfilled. The situation, fumed at by charlatan, fretted over by frightened student, and fought against by some college professors, has now become a matter of fact, and we hear of no one other than the barnacle that fattens in the absence of restraining influences, who is willing to return to the old order of things which existed for so many years. It is safe to say that in less than ten years the distinctions, now barely understood, or for the most part very much misunderstood, by the laity, which in medicine, as in all science, recognizes only worth and relegates bluster and charlatanry to the rear, will be an open book, so that he who runs may read. The advertising quack will have his place, as does the shyster lawyer, because all *physicians* must needs by that time be on a parity, the foundation of which will be knowledge, vouched for by the State in the form of a license.

Some of the effects of the establishment of State boards of medical examiners have been improved methods of teaching, prolongation of terms of study, and the establishment of new chairs of instruction. While in New York State the entire subject of medicine is divided into seven main topics, the questions asked under these topics are so sub-divided as to comprehend almost every sub-head in medicine. Realizing the importance of having their graduates well equipped for passing these tests, the means above enumerated have been adopted for the benefit of college and profession. In consequence, teachers on hygiene, medical jurisprudence, and other subdivisions of medicine, exist now in fact as well as in name in most of our colleges, a thorough drill and review teaching is a feature of the curriculum, and some of the lecture courses extend over a period of eight months.—*Buffalo Medical and Surgical Journal*, November, 1893.

THE GENTLE TOUCH.

MR. BILTON POLLARD, in his address before the University College, London, gave a very timely and practical hint regarding the kindly treatment of hospital patients by internes. We regret to say that such a lesson is occasionally much needed in many of our public institutions, and the heeding of it will give that necessary exercise of the finer humanities which fits the graduates for the higher grades of successful practice among the so-called cultivated classes. The lecturer very properly maintains that an interne who can, by his gentle methods and appreciative sympathy, win the love and friendship of his poor and dependent patients, has gained as important an experience as any he can obtain in the hospital ward. Not that the ordinary hospital attendant intends any wrong, but there is, in some instances, a sudden inflation of his importance which invites dictatorial brusqueness, and an indisposition, in the exercise of duties supposed to be more important, to give time and thought to the exercise of the better elements of his manliness, by a compassionate consideration for the sufferings of such as are at his mercy. The cry of agony is never necessary for a diagnosis when the surgeon is the active agent of its production. The man who inflicts unnecessary pain in handling an injured limb is either a bungler or a brute.

The difference between the one who considers the feelings of his patient and the other who does not is very apparent in the examination of a wound or the manipulation of a fracture. In the former the practised delicacy of touch discovers all that it is necessary to know concerning the extent or character of the wound, without a sign of pain from the patient; while the latter, by the pressure and twist in the wrong place and at the wrong time, transforms the patient from a quiet, helpful, and submissive subject, to a shrieking and horrified sufferer. Even the most ignorant patient takes such lessons to heart. With a rich patron the question of choice could very easily be settled, but usually the sick or injured pauper must submit to the inevitable. When we consider that the highest science aims to mitigate pain, we can hardly claim superior accomplishments or greater depth of learning for the man whose very touch is signalized by a howl.

While it may not be possible for everyone to obtain this refinement of manipulation, there is no excuse for not cultivating it in every instance. Scientifically speak-

ing, a sick beggar is the same as a sick king. Their nervous systems are made alike, their reflexes are similar, and their pain-centers are equally responsive. The one who can learn early to treat them from the same standpoint of appreciation becomes the sympathizing friend of both, and will be as welcome in the palace as in the hovel. There may be a reason why all cannot be great physicians, but we all can be gentle ones. Even in our most desperate cases, when all other remedies fail, the very last to lose its influence is the kind word fitly spoken.—*Medical Record.*

THE INFLUENCE OF ALCOHOL.

The influence of alcohol on the nerves, and especially on the motor nerves, is seen in the acute stage of intoxication, and in its chronic form is exhibited in delirium tremens and various forms of neurotic disease. But, fearful as are these diseases, they are of comparatively rare occurrence, while diseases springing from the action of alcohol on the physical organs are of such far more frequent occurrence as to render their consideration of greater practical importance. Alcohol exerts its essential and most significant influence on the vital organs by being taken up in the circulation, and thus brought into direct contact with the cellular tissues of the vital organs. Cirrhosis of the liver, diseases of the heart, of the arteries, of the kidneys, and of the mucous membrane of the alimentary canal, along with gout, diabetes, and fatty degeneration, are all ascribable to it. This is a formidable list when we take into consideration their frequent occurrence, and I can only ascribe the indifference of the profession to a want of realization of the injurious consequences flowing from the pernicious habit. Alcohol is frequently prescribed under the mistaken impression that it possesses wholesome and even healing properties. The physician, as family friend and adviser, should be careful not to err in this direction; especially should alcohol never be administered to children. The prevention of the evils of alcoholism, when once realized, should appeal to us as physicians to enlist all our forces in an earnest effort to grapple with them. Prevention is, in principle, so easy. Nothing is needed but insight and good will! Shall we not, then, gladly embrace the opportunity to avert such endless misery? The ridicule with which the opponents of alcohol are assailed will lose all its force, when one is supported by the firm conviction that he is toiling for a good cause in the service of humanity.—*Dr. Adolf Strümpell.*

REVIEWS.

A Text-Book of Ophthalmology. By Wm. F. Norris, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, etc., and Charles A. Oliver, A.M. M.D., One of the Surgeons to the Wills Eye Hospital, etc. Illustrated with five colored plates and 357 woodcuts. Philadelphia: Lea Bros. & Co., 1893.

This book cannot fail take its place as in many respects the best American, which is equivalent to saying the best English, text-book on the subject of Ophthalmology. We have long awaited this volume, in the sense that we have long wished for such a volume from somebody, and also for this special volume by these authors. It is of course true that science knows no nationality or geographic limits, but it is also true that one people, or set of men, may at times push farther than another toward perfection in some one branch or phase of a subject, and thus be better able to present certain advances or practices of it. In ophthalmology Europeon scientists and practising physicians have stamped the specialty with a certain method and tendency that, while gratefully acknowledged by us, and also followed by us quite so far and so fast as is at all desirable, is still surely but a partial and one-sided development. In pathology, inflammatory diseases of the eye, and even in the theoretic aspect of the sciences of refraction, accommodation, and muscular errors, we may have much to learn of our brethren over sea; but it is also true that in the practical aspects of these latter branches of our science we Americans may truly contend that we are also teachers, and that we have discovered much valuable truth to teach.

In these noteworthy fields of the practical application and therapeutic results of scientific optics, Drs. Norris and Oliver have, as we have said, given us the best work yet at hand. In the ordinary text-book the ordinary student either skips entirely the chapters on optics, or he is ludicrously dazed by the incomprehensible mathematic gibberish of the "explanation." But in Dr. Oliver's exquisitely beautiful illustrations and perfect-running text, the simplest (as well as the most trained mind) must find joy in the easy comprehension of the laws of catoptrics, dioptrics, and physiologic optics. When we turn to the chapters of the senior editor on the treatment of the various phases of ametropia, we find clear recognition and exposition drawn from ripe experience of the action and cure of that condition.

The treatment of the diseases of the eye and the highly important bearings of medical ophthalmology are most praiseworthy, and are what was to be expected of the trained and experienced senior editor.

Space at our disposal does not permit of detailed mention of the many excellent things to which we would like to call attention, and criticism of a few incongruities seems almost rude in return for such excellent workmanship.

We are compelled to object to the separation of the treatment of the subjects of ametropia, accommodation, etc., in two different parts of the book, and think it would have been in better literary taste to have merged these chapters into one connected narrative. Possibly also some confusion to the student would have been avoided.

We are delighted to find a rational statement of the unreliability and defects as well as of the uses of the ophthalmometer. It is abundantly clear that for accuracy and reliance the test-lenses and mydriatic are prerequisites in refraction of the young. Neither is graduated tenotomy a fetich with our authors.

We wish mention had been made of the theories of the influence of ametropia in the production of specific macular changes, and also of the method of treating functional stenosis of the mechanism of the drainage-system by means of antiseptic and astringent physiologic irrigation aided by massage, even if the authors do not believe in these theories.

Of that most important and usually most culpably neglected literary helper, the index, we regret that a word of unqualified blame must be added; and is it not, indeed, too bad to look in vain in the index of a book on ophthalmology, A. D. 1893, for such words as these: *Tenotomy*, *Epiphora*, *Epilation*, *Cryptophthalmus*, *Collyria*, *Cocain*, *Diplopia*, *Luxation of Eyeball*, *Malingering*, *Helmholtz*, etc.? In all other respects unqualified praise must be awarded the editors and publishers for this noble piece of bookmaking, as well in illustration as in typography, etc. By the way, what superb art our Philadelphia engravers and illustrators are showing nowadays!

SYSTEM OF DISEASES OF THE EAR, NOSE, AND THROAT. Edited by CHARLES H. BURNETT, A.M., M.D., Emeritus Professor of Otology in the Philadelphia Polyclinic; Clinical Professor of Otology in the Woman's Medical College of Pennsylvania, etc. Vol. II. Illustrated. 8vo, pp. 858. Philadelphia: J. B. Lippincott Co., 1893.

BURNETT'S System, like the child that has a lot of dainties, "keeps the best for the last." The final article in the concluding volume is on Tuberculosis and Syphilis of the Larynx by no less an authority than J. Solis-Cohen. With characteristically concise comprehensiveness, this chapter, of but thirty-three pages, of which much space is devoted to pictorial illustrations, leaves nothing further to be said upon the two important subjects treated. The results of an unrivalled experience and a rare erudition are given briefly, clearly, and in a judicial spirit. The volume likewise opens well. The first subject treated is Morbid Growths and Deformities of the Nasal Cavities. There are two articles, one by Seiler and one by Jarvis. Seiler's chapter on Pathology, Etiology, Physiology, and Differential Diagnosis is one of the most important contributions to literature made by its accomplished author, and exhibits careful and conscientious study. Jarvis writes of his personal methods in Surgical Procedures, and gives brief reference to the methods of others. Bosworth has an excellent article on Hay-fever, with copious references. He believes that three elements are necessary to the full development of the affection: (1) a neurotic constitution, (2) nasal abnormity, these forming the predisposition, and (3) an exciting irritant, usually pollen, the species varying with the individual. We have seen cases in which no structural abnormity could be detected; otherwise we agree with the author. Joseph A. White writes of Neuroses of the Nose and Nasopharynx, and George M. Gould well elucidates the subject of the Interdependence of Nasal and Ocular Affections. Pathologic conditions of the nose affect the eye more often than those of the eye affect the nose; yet instances of the latter group are not wanting. Skin Diseases of the Nose are treated of by Bulkley, and in his usual thorough manner. A. W. MacCoy has a good chapter on the Anatomy and Physiology of the Pharynx and Larynx. S. H. Chapman writes diffusely but well of Vocal Culture and Hygiene. Thorner's article on Acute Pharyngitis, Bean's on Acute Tonsillitis, Ingals' on Chronic Pharyngitis, and Arnold's on Chronic Laryngitis are interesting and reliable. Croup has been assigned to W. C. Glasgow, who does nothing that is not well done, and who can now write of "idiopathic membranous croup" without fear of contradiction by the parrots. J. Lewis Smith is an authority on his subject—Diphtheria, and Nancrede's article on Surgery in Croup and Diphtheria is judicious. Lupous and Leprous Laryngitis, by Ramon de la Sota, is one of the best contributions to this excellent volume, and will be a standard of reference. Shurly's well-treated subject is Chronic Laryngitis, Simple and Traumatic; Roe's is Foreign Bodies in the Air-passages and Esophagus; C. H. Knight's is Chronic Disease of the Tonsils; R. P. Lincoln has forty good pages on the Pharynx and Larynx in the Exanthemata and Other Febrile Affections; Porcher writes of Neuroses of the Pharynx and Larynx, and Dysphagia; and Lennox Browne contributes a good account of Deformities and Morbid Growths of the Pharynx and Larynx. The volume as a whole is better than the first volume. The editor is to be congratulated on the rare thoroughness of the editorial work. The indices are models.

DISEASES OF THE RECTUM AND ANUS: THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT. By CHARLES B. KELSEY, A.M., M.D., New York, Professor of Diseases of the Rectum at the New York Post-Graduate Medical School and Hospital; late Professor of Diseases of the Rectum at the University of Vermont, etc. Fourth edition, revised and enlarged. With two chromolithographs and one hundred and sixty two illustrations. Octavo, pp. 496. New York: William Wood & Co., 1893.

THIS standard text-book has been thoroughly revised and brought up to date by the author. It is a work that the general practitioner cannot afford to omit from his library. Diseases of the rectum have for a long time been a special field for quacks and nostrum-venders, for the reason that the regular practitioner failed to examine the rectum digitally in every case of trouble with the lower bowel. Consequently errors in diagnosis were common. In recent years much interest has been manifested in rectal diseases, and as the physician is frequently consulted by his patient for the treatment of these maladies, he will do well to possess some late standard work on the subject. To such we can confidently recommend Dr. Kelsey's book. It is practical, and will enable any physician to recognize and treat many of the affections of the part without occasion to refer the patient to the special surgeon.

In no field of medicine is it more incumbent for the physician to take nothing for granted than in the diagnosis and treatment of diseases of the rectum. Yet, how frequently is a diagnosis of "piles" made by the patient, and accepted by the practitioner, without question or examination. It is true that hemorrhoids constitute the bulk of rectal maladies, yet the specialist and general surgeon are well aware that often the hemorrhoids are but a symptom of some other affection, such as stricture, etc.; therefore, in reading Dr. Kelsey's book, if nothing else is impressed upon the mind of the reader, but this advice, *Never treat a case of disease of the rectum without first making a direct ocular and digital examination*, then the price of the volume will be many-fold times repaid to its owner.

Extended reviews in The News of former editions of this work render a detailed description of the present volume superfluous.

Essentials of Bacteriology. Being a concise and systematic Introduction to the Study of Microörganisms, for the use of Students and Practitioners. By M. V. Ball, M.D. Second edition, with 81 illustrations and 5 plates. Philadelphia: W. B. Saunders, 1893.

A handy little book for the medical student and general practitioner is the second edition of Dr. Ball's *Essentials of Bacteriology*. While of too small a compass to contain any satisfactory presentation or discussion of the many moot points of bacteriology, and for this very reason misleading at times, the book is a useful one—comprehensive to a marked degree for one of the size, well arranged, well printed, finely illustrated, and with a good index.

A striking indifference, however, to the unanimous opinion of systematists, as embodied in the reports of committees on nomenclature in the various scientific congresses of late years, to the effect that all specific names, without exception, should be printed with small initial letters, is shown by the author, who appears to follow no system at all; the specific names of the table of contents all possess capitals, while none of those in the index is thus favored, and a hit-and-miss plan is adopted throughout the body of the book. Aside from this, and a few errors in synonymy, Dr. Ball's little book may fairly be considered one of the very best of its kind.

A Dermatologic System. By Dr. S. Jessner, of Königsberg. Pp. 66. Hamburg: Leopold Voss, 1893.

The system which is here put forth in detail is built upon the classic work of Hebra, and is on the pathologico-anatomic basis, which we believe to be the right one for many reasons. It differs, however, in distinct particulars from that classification. Six classes are made: 1. Functional anomalies (without visible alterations). 2. Anomalies of the distribution of the blood (without inflammation). 3. Inflammations. 4. Hypertrophies. 5. New growths. 6. Regressive disturbances of nutrition. The work has been prepared with care and from the present standpoint of knowledge, and we commend it to the perusal of all who are interested in dermatology.

CORRESPONDENCE.

COMBINED METHOD OF OPERATING UPON THE BLADDER AND URETHRA.

To the Editor of The Medical News,

Sir: The accompanying report was already typewritten when your issue of October 14th reached me, containing Dr. Stewart's article on the combined method of operating in cases of ruptured urethra.

All surgeons are well aware of the great difficulty of perineal urethrotomy without a guide, its uncertainty, and the great length of time frequently required to complete it.

While I would by no means presume to say that the combined method is best for *all* operators and in *all* cases, I am nevertheless certain that for most men it is much speedier, easier, and safer than any other.

E. M., thirty-three years old, weaver in a cotton-mill, when between sixteen and seventeen years old, acquired gonorrhea which resulted in stricture. When twenty-five years old he was operated on at the Massachusetts General Hospital. Unsuccessful attempts having been made without ether to introduce a filiform bougie, he was anesthetized and some operation performed. No perineal incision was made. He was in the hospital for about two weeks. For four months after this operation he occasionally introduced a No. 22 F. sound, which had been given him while in the hospital. He never passed this sound into the bladder but only through the pendulous portion of the urethra, and ceased using it because in spite of it his stream grew smaller and smaller until it was as small as before the operation.

After a time the urine came only drop by drop, and finally, in 1889, an attack of complete retention drove him to a physician. A perineal operation was now performed. After this operation the urine came no better than before, and a sound could not be passed. The patient's history during the past four years has been one of continuous suffering, with occasional attacks of retention.

I have seen him in several such attacks, and have relieved him by aspiration, being unable to introduce even a filiform bougie. Finally, on the eighth day of June last, after complete retention for three days, he consented to an operation.

I first opened the bladder above the pubes and passed an instrument from the bladder into the urethra as far as the posterior face of the principal stricture (which was in the membranous urethra). Then I passed an instrument through the anterior urethra as far as the anterior face of the stricture, and cut from one instrument to the other. Then with an Otis urethrotome I cut two strictures in the pendulous urethra, and with a scalpel deepened the perineal wound until a No. 18 E. sound could be easily passed into the bladder. After passing a large catheter through the perineal wound into the bladder for a drain and washing out the bladder with warm boric-acid solution, the man was put to bed. The supra-pubic wound was left open. The bladder was drained until no fluid could be forced through the supra-pubic wound. The man was at work in the mill with all his wounds healed in less than a month from the day of the operation. He uses the No. 18 E. sound himself about once a week, without any trouble at all.

My reasons for preferring this combined mode of operating were: 1. No guide could be worked through the stricture. 2. An excellent surgeon had failed to find the urethra behind the stricture in 1889. 3. The perineum was one mass of scar-tissue in the neighborhood of the urethra. 4. The patient was in such a condition that I considered it of importance to operate as quickly as possible.

The operation as described is easily performed, except when, as happened in this case, the bladder is very deeply situated and the peritoneum comes further down on its anterior surface than usual. In such cases the serous membrane must be dissected up with the scapel-handle and finger-nail until enough of the bladder is

exposed, and I have found that an assistant with two fingers in the rectum can push up the bladder much better than can be done with a rectal bag, even though the latter be helped by putting the patient in the Trendelenburg position.

Respectfully,

GARRY DEN. HOUGH, A.B., M.D.

NEW BEDFORD, MASS.

NEWS ITEMS.

Congress of American Physicians and Surgeons.—At a meeting of the Executive Committee of the Congress of American Physicians and Surgeons recently held in New York, and attended by representatives of the various constituent organizations, a local committee of arrangements in Washington was appointed as follows: Drs. S. S. Adams, John S. Billings, H. C. Beyer, S. O. Ritchie, S. C. Busey, W. W. Johnston, J. Atkinson, Wm. H. Welch, I. C. Rosse, Samuel Theobald, T. Morris Murray, D. W. Prentiss, Frank Baker.

It was arranged that the following subjects should be discussed by the Congress at its next meeting in Washington in the latter part of May, 1894:

The Climatological Association: "Sewer Gas."

Genito-Urinary Association: "The Surgical Kidney in its Clinical Aspects."

Dermatological Association: "Leprosy in the United States."

Laryngological Association: "Intra-nasal Surgery."

Gynecological Association: "The Conservative Treatment of the Female Pelvic Organs."

Neurological Association: "The Effects of Infectious Processes on the Nervous System."

Dr. Wm. H. Welch was elected to fill the vacancy on the committee occasioned by the resignation of Dr. W. H. Carmalt, so that the committee now consists of Dr. A. L. Loomis, President of the Congress; Dr. Landon Carter Gray, Chairman of the Executive Committee; Dr. Newton M. Shaffer, Secretary of the Executive Committee, and Dr. Wm. H. Welch.

A Case of Distoma Hematobium in Chicago.—HILLMANTEL (*Chicago Medical Recorder*, vol. v, No. 4, p. 230) has reported a case of distomiasis in an Egyptian boy twelve years old, connected with one of the departments of the Columbian Exposition at Chicago. The only symptom complained of was hematuria, which had been present in varying degree for six years. The general health was good and there was no elevation of temperature. The urine presented a reddish-brown color and contained a considerable quantity of albumin and clotted blood. In addition ova of the distoma hematobium were found, but a fully developed worm could not be detected.

Dr. William F. Hutchinson, who was only recently elected to the chair of Electro-therapeutics in the newly organized Tufts Medical School of Boston, died on October 2d, in consequence of a cardiac lesion, at the age of fifty-five. He was a man of liberal education and served faithfully in the War of the Rebellion.

Correction.—By an inadvertence the word "inaccessible" appears instead of "*accessible*," in the last line of the quotation from Osler's *Practice of Medicine*, on the second column of page 517 of THE NEWS of November 4, 1893.

BOOKS AND PAMPHLETS RECEIVED.

La Sudure Complète du Voile Palais et du Pharynx. Par le Dr. A. Cartaz. Paris: G. Steinheil, Editeur, 1893.

Our Dispensaries, Hospitals, Philanthropy, Frauds, and the Necessity of Medical Reform. By L. F. Criado, A.B., M.D. Reprinted from the Brooklyn Medical Journal, 1893.

The Treatment of Alcoholic Inebriety. By Frederick Peterson, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Leptothrix Mycosis of the Tonsil, Pharynx, and Base of the Tongue. By William Cheatham, M.D. Reprinted from the American Practitioner and News, 1893.

Cremation and its Importance in Cholera. By Robert Newman, M.D. Reprinted from the Sanitarian, 1893.

The Reconstruction of the Pelvic Structures in Woman. By Henry O. Marcy, M.D. Reprinted from the Transactions of the American Association of Obstetricians and Gynecologists, 1892

Woman's Medical College of Pennsylvania, Philadelphia. Catalogue and Forty-fourth Annual Anncuncement, May, 1893.

In Memory of Prof. T. G. Richardson, M.D. Memorial Address delivered on Commencement Day, April 5, 1893. By Prof. Stanford E. Chaillé, A.M., M.D., Dean of the Medical Department, Tulane University, La.

Catalogue of the Pennsylvania State College, 1892–93. State College, Penna., 1893.

Movable Kidney; with a Report of Twelve Cases treated by Nephrorrhaphy. By George M. Edebohls, A.M, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

Revue Statistisque des Maladies de la Gorge, du Larynx, du Nez, et des Oreilles. Par le Docteur R. Beausoleil. Paris, 1893.

A Case of Rupture of Ovarian Cyst. By Reuben Peterson, M.D. Reprinted from the American Journal of Obstetrics, 1893.

Paralysis Agitans. By Francis X. Dercum, M.D. Reprinted from International Clinics, vol. i, 2d series.

Note on a Chinese Brain. By Francis X. Dercum, M.D. Reprinted from the Journal of Nervous and Mental Disease, 1892.

An Indication for the Treatment in Hemifacial Atrophy. By F. X. Dercum, M.D. Reprinted from the Journal of Nervous and Mental Disease, 1892.

A Case of Ataxia of Irregular Type following Injury. By F. X. Dercum, M.D. Reprinted from the Journal of Nervous and Mental Disease, 1891.

Diseases of the Eye. By George A. Berry, M.B., F.R.C.S. Second edition. Philadelphia: Lea Brothers & Co., 1893.

The Anesthetic Zone in Nitrous-oxid Anesthesia. By John D. Thomas, D.D.S. Reprinted from the Dental Cosmos, 1893.

Zur Therapie der Hautkrebse. Von Dr. Oscar Lassar. Sonderabdruck aus der Berliner klin. Wochenschrift, 1893, No. 23.

Catalogue of the Albany Medical College, Sixty-second Session, 1892–3, and Announcement for Session of 1893–94. Albany: Press of Brandow Printing Co., 1893.

University of Pennsylvania. Catalogue for Sessions of 1892–93, and Announcement for Sessions of 1893–94. 128th Annual Session, Department of Medicine. Philadelphia, 1893.

Milk Legislation; Variability of Milk Solids; Honesty No Safeguard; No Sanitation in "Legal Limits." By George Abbott. Reprinted from the Times and Register, 1893. Appendix. Skim Milk—a Wholesome, Nutritious, and Economic Food.

Cases of Anemia, with Great Enlargement of the Spleen (Splenic Anemia); Pathologic Changes in the Spleen. By R. T. Williamson, M.D. (Lond.), M.R.C.P. Reprinted from the Medical Chronicle, 1893.

Enteroplexie. Par le Dr. Adalbert Ramauge. Mémoire Presenté et Couronné au Concours de Médecine Internationale Sud-Americain le 20 Janvier, 1893 Imprimerie, Lithographie et Atelier de Reliure de Jacobo Penser. Buenos Ayres: Esquina San Martin y Cangallo.

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ORIGINAL ARTICLES.

PATHOLOGY AND TREATMENT OF PARALYSIS FROM POTT'S DISEASE.[1]

BY WHARTON SINKLER, M.D.,
OF PHILADELPHIA.

AT first sight one is likely to regard the paralysis that so frequently occurs in spinal caries as the result of direct pressure upon the cord by the bent and distorted spinal column. Reflection as to the history and symptoms of the disease shows that this is not generally the case, and this is also proved by the conditions found on the post-mortem table. The onset of paralysis in Pott's disease is almost always gradual, and it is a well-known fact that cases are not unusual in which an acute angular curvature has existed for many years without any symptoms of paralysis, and yet, eventually, paraplegia may develop.

In a patient who was under my care there had been a prominent antero-posterior curvature in the dorsal region for many years without interfering with the man's locomotion. One day while carrying a heavy tin box and some fishing-tackle he ran across a ploughed field to catch a train. When he reached the train he felt considerable numbness in his legs, and upon arriving home he walked up stairs with difficulty. In twenty-four hours he was unable to stand, and within a few days there was complete paraplegia that lasted several weeks. The patient ultimately entirely recovered after suspension and the application of a plaster-of-Paris jacket.

Were the paralysis the result of bony pressure there would be complete loss of motion and sensation below the point of injury, just as is met with after fracture of the vertebræ or fracture-dislocation; but it is well known that the paralysis in Pott's disease is generally limited to motion.

The relatively large caliber of the spinal canal, compared with the size of the cord, permits of a considerable amount of bending of the spinal column without materially impinging upon the cord. Of course, it does sometimes occur that in an angular curvature there is also displacement of one of the bodies of the vertebræ, followed by complete compression of the cord, but this is not often the case. The spinal cord shows extraordinary tolerance of pressure, if the pressure is gradually produced. It is not an unusual thing to find in an old case of Pott's disease that the cord has been flattened almost into a ribbon, without its functions having been impaired to a marked degree.

The papers that are to be read dealing with the surgical pathology of spinal caries render it unnecessary for me to speak in detail of the changes that occur in the bones.

The inflammation of the bodies of the vertebræ and of the inter-vertebral substance is the first step in the process. This inflammation, which is either tuberculous or scrofulous, results in the breaking down of the substance of the bone, and when this occurs the deformity of the spine follows. The effect of this inflammation is often to cause suppuration, and the pus will either find its way externally or it may penetrate into the spinal canal and there make pressure upon the cord. Frequently, however, no pus is formed. The bodies of the vertebræ soften and break down, undergoing a caseous degeneration, and absorption of the inter-vertebral discs takes place. While these changes are going on there is an extension of the inflammatory process to the dura. The connective tissue between the dura and the bone becomes thickened, with the development of a thick layer of organized lymph between the two, giving rise to what is known as external pachymeningitis. In this semi-purulent form of pachymeningitis, the layer of inflammatory products of caseous or fibrinous material and sometimes with pus in spots, often becomes extraordinarily thick; occasionally it is as much as one-half inch in thickness, and may extend vertically two or three inches.

The inner surface of the dura is usually smooth and unaffected by the inflammation, but there may be an inflammation of the inner side as well, although this is rare. However, when it does occur the internal membranes are also involved, and adhesions take place between them and the dura and the cord.

The pachymeningitis being the result of extension of the inflammation from the contiguous surface of the degenerating vertebral bodies, the inflammatory thickening takes places on the anterior surface of the cord, the result being pressure upon this region and consequently paralysis of motion. The paralysis of motion is sometimes the result of simple

[1] Read before the Section on Orthopedic Surgery of the College of Physicians, October 20, 1893.

pressure upon the cord, but there may also be a myelitis from an extension of the inflammation, and this may extend all the way through the substance of the cord, giving rise to the so-called "transverse myelitis."

On post-mortem examination the cord presents evidence of the compression to which it has been subjected and, as has been already remarked, may sometimes be flattened out like a strip of tape. It may be reduced in size, so that for an inch or two it is not larger than a lead-pencil. When the cord has been compressed, the color is grayish, and in cases of short duration its consistency is soft, while in cases of long-standing it is firmer than usual. The amount of myelitis does not depend upon the degree of pressure, for a considerable amount of myelitis may be found in cases in which the compression has been slight, extending, as has been already said, from the adjacent inflammation in the dura.

Under the microscope there is found a general increase in the interstitial connective tissue, with various changes in the cells, but late in the disease all of the cells disappear. The nerve-elements also undergo degeneration, the nerve-fibers becoming shrunken and having but a narrow sheath of myelin. When there has been extreme pressure, nothing is to be found but a narrow fibrous band at the point of division, which is sometimes difficult to discover, but there is never actual division of the cord itself. The nerve-roots also show signs of the effects of the pressure and inflammation where they pass through the membranes and inter-vertebral foramina. They are often compressed by the thickening of the dura, and they may also suffer from the narrowing of the spinal canal. On section they are sometimes red and swollen, or they may be shrivelled and gray in color.

The symptoms in caries of the spine are threefold: first, those of bone-disease; secondly, those of disease of the nerve-roots, and thirdly, those of the changes in the cord itself. These latter may be subdivided into the symptoms depending upon myelitis from extension of inflammation and those of compression of the cord. The symptoms referable to the bone-disease properly belong to the surgical aspect of the subject, but they are so important in aiding us to make a correct diagnosis that it is well to bear them in mind. In caries of the spine there are localized pain and tenderness on pressure at a certain point of the spine. This pain is increased by movements of the trunk and more particularly by the bending of the body forward. At the seat of pain there is usually some prominence or irregularity of the spinous processes, although this is not always present, and is a later symptom in the disease.

If the disease is in the cervical region, movements of the head will occasion pain, and, in order to avoid the pain caused by these movements, the patient usually carries the head stiffly or supports the chin with his hand. Should the disease be situated in the dorsal region there is a compensatory curve in the lumbar region, and any patient presenting a well-marked lordosis, in connection with symptoms of nerve-disturbance in the extremities, should excite our suspicions as to bone-disease, even if it is not possible to detect any deformity in the vertebra. We should not forget that lateral curvature may also be due to caries of the spine and give rise to pressure-symptoms.

Symptoms of disease of the nerve-roots are usually present, although it is stated by some authorities that they are not frequently conspicuous. In my experience, however, there are usually some evidences of irritation or disease of the nerve-roots. These symptoms consist in pain in the distribution of the nerves that emerge at the inter-vertebral foramina in the affected region of the cord. There may be pain in the course of the nerves in the limbs, or the symptoms may be only those of paresthesia, such as numbness and formication. There is frequently more or less girdle-pain at the level of the affected nerve-roots, and occasionally herpes zoster may be met with in the course of the irritated nerves. It is not infrequent, in spinal caries, to find pain referred to the epigastrium, and in one or two cases I have seen severe pain in the hypochondriac region, simulating renal colic.

In irritation of the motor roots we have symptoms of disordered muscular action and wasting of the muscles. Occasionally, there are active muscular contractions as the result of the irritation of the motor nerves. When the cervical spine is diseased, there may be disorder of the sympathetic nerves, with localized sweating and dilatation of the pupils.

The symptoms of the cord-disease, when dependent upon myelitis from extension of the inflammation, are like those of myelitis from any other cause, but, as has been already observed, the myelitis is rarely transverse and is usually confined to the anterior portion of the cord; hence the symptoms are principally motor in character.

The onset of the paralysis is usually gradual and often occurs as the result of some unusual exertion or exposure to cold. The rapidity of development varies and total paraplegia may result in a few days, although it is usually several weeks before it is complete.

The degree of motor paralysis also varies with the extent of the cord-disease; sometimes there is merely stiffening of the limbs, with a spastic gait, with slight impairment in the control of the bladder and rectum, while at other times motor paralysis is absolute. When the paralysis is due to compression,

it is likely to be more complete, with sensory disturbances, as well as the loss of motor power. When the pressure is confined to the anterior portion of the cord, as it usually is, there is only motor paralysis, with more or less weakness of the bladder and rectum. The pachymeningitis may, however, entirely surround the cord, and if there is much fibrinous or caseous exudation the compression will be almost total. When there is bony displacement, in addition to the pachymeningitis, it is readily seen that the compression of the cord will be still greater. Under these circumstances, the motor and sensory paralysis is entire, and there is also paralysis of the bladder and rectum. Bedsores do not generally occur, except as the result of neglect, because, as a rule, the trophic disturbances are not great.

In both forms of cord-disturbance, whether due to myelitis from extension or myelitis from compression, the reflexes are greatly exaggerated, provided the disease is above the lumbar region. The knee-jerks are grossly exaggerated, ankle-clonus is present, and the superficial reflexes are also unduly excitable. Occasionally patella-clonus is present, and the toe-reflex, to which I have called attention elsewhere, may be developed. If the disease is situated as low as the lumbar enlargement the reflexes will be entirely absent and there will be paralysis of the bladder and rectum.

The symptoms, of course, will depend upon the region of the spine in which the disease exists. If it is in the cervical region there may be paralysis of both arms and legs, or if it is in the dorsal region, which is the common seat of caries, there will be simple paraplegia. There is occasionally complete anesthesia, but sometimes this is confined to areas of varying extent over the limbs, and at times we may have associated with loss of tactile sense hyperesthesia. Generally both legs are equally paralyzed, but occasionally one is affected more than the other, and in a patient whose history I shall relate the knee-jerk was exaggerated on one side and abolished on the other side.

Among the complications that may be mentioned are bedsores, cystitis, and contractures. The symptoms may change, owing to the fact that degeneration of the cord may extend from the original focus of disease. An ascending degeneration of the posterior columns will give rise to tabetic symptoms. Gowers asserts that the inflammation may ascend in the pyramidal tracts when the disease is in the lumbar region, and thus give rise to paralysis of the arms.

The course of the disease, once the paralysis has been established, depends to a great extent upon the condition of the bone. If the bone-disease should heal, the inflammation of the cord usually subsides as the pressure becomes less, although if the myelitis exists independently of pressure this improvement does not necessarily take place. The sensory paralysis when present usually passes away early and the motor loss remains for a longer time. The motor paralysis may remain for months and even years before improvement takes place. In one of the cases that I shall report there was total paraplegia for sixteen months, and yet the patient recovered complete use of the legs. In many cases the paralysis gradually passes away, even when the compression of the cord to a considerable degree remains. Should no improvement take place in the condition of the bones the paralysis is likely to remain complete, and although life may be extended for several years, eventually death occurs as the result of bedsores, cystitis, or from the development of tuberculous disease elsewhere. Relapses may occur during the course of the disease, but they are not common. When improvement has once begun it is usually constant.

The diagnosis of compression-myelitis is easily made, provided we find symptoms of bone-disease; and in all cases of spastic paraplegia one should carefully examine the spine for irregularities and for tenderness. This is more particularly to be looked for in children, because transverse myelitis or primary lateral sclerosis is unusual at an early age, whereas spastic paraplegia from Pott's disease is comparatively common in children. A mistake frequently made is overlooking the spinal disease in children, and it is a very serious error as regards the prospects of recovery. I have on more than one occasion seen children with paraplegia made to take as much exercise as possible when there was well-marked caries of the spine present which had not been detected, and when every movement caused pain. The symptoms depending on disorder of the nerve-roots also aid us in making a diagnosis.

The diseases most likely to be mistaken for compression-myelitis are chronic myelitis, transverse myelitis, primary sclerosis of the lateral columns, and, when the disease is in the cervical region, progressive muscular atrophy. Another condition for which paralysis from Pott's disease may be mistaken is syringomyelia. In this disease, however, there is no pain, although the spinal column frequently presents a lateral curvature, and there is the well-known symptom of inability to distinguish heat and cold.

We must not forget that there are other causes of pressure than caries and pachymeningitis. There may be tumors of the cord and aneurism.

The prognosis depends upon the extent of the paralysis, and the region of the cord affected; but there is no disease that gives rise to such complete paralysis of motion and sensation in which we may hope for ultimate recovery, as in paralysis from

Pott's disease. Even after the lapse of months or even years, complete paralysis of motion may pass away and the patient become able to walk with his previous activity. Should there be complete palsy of motion and sensation, as well as paralysis of the bladder and rectum, the prognosis is bad, but even in such cases recovery may take place. If the disease is in the lumbar enlargement or in the cervical enlargement, the chances of recovery are less. We must also bear in mind that the prognosis depends upon the prospect of recovery from the constitutional trouble. The scrofulous or tuberculous tendency may be developed elsewhere and the patient die from lung-disease or disease in some other organ.

TREATMENT.—In many cases of paralysis from Pott's disease all that is necessary to restore the power of motion is to give the patient complete rest, and some cases recover even when only a small amount of rest has been taken. The healing of the bone-disease depends very largely upon rest of the part, and the deformity that results is largely dependent upon the position in which the patient has been placed during the healing of the caries. In some cases, even after the inflammation of the vertebræ has apparently entirely ceased, paralysis remains in spite of complete rest having been enforced for many months. It is these cases that come under the care of the neurologist, and it is in these cases, I am happy to say, that the most gratifying results are obtained.

While complete rest is a necessary element in treatment, it must be supplemented by other means. The most important of these is extension of the spine by suspending the body by the head. The most satisfactory way of accomplishing this is to place the patient in an arm-chair, while from the back of the chair is a bent iron rod which projects above the patient's head. To the end of this rod is attached the cord from a head-sling. It is a good plan to insert between the head-piece and the iron bar a spring balance, so that the amount of extension may be measured in pounds. The apparatus I show you is what is usually employed in these cases at the Infirmary for Nervous Diseases.

The patient begins to have extension for fifteen minutes twice a day, and the amount of traction varies from ten to twenty-five pounds, according to the weight of the patient. The degree of pull is gradually increased and may reach seventy pounds. The length of time that the patient is suspended is increased each day until he sits up with the extension on for three hours at a time. The good effects of suspension are occasionally observed immediately, but sometimes no benefit is seen until after several weeks. I have frequently seen cases that have had rest and spinal jackets, and whose paralysis has remained stationary, yet who made immediate gain after the employment of extension.

Extension is sometimes made while the patient is lying in bed by having a cord and weight passing over a pulley at the head of the bed. This is applicable in children, but in adults the weight of the body is too great to make extension in this way effective.

Suspension after the method of Motschutkowski, of Odessa, in the treatment of locomotor ataxia, is not applicable to paraplegia from caries of the spine, as the patient is usually unable to manage the apparatus as well as an ataxic, and besides, by this method the suspension can be maintained for only a few minutes.

Some assert that the good effects from suspension are due to the straightening of the spinal column, but it is doubtful if very much elongation of the spine can be effected by this means. Others declare that by suspension the spinal cord is actually stretched. Reid and Sherrington[1] have made some interesting experiments in connection with the effect of movements of the body upon the size of the spinal canal. They arrive at the following conclusions: First, that when the body hangs freely and vertically from the skull the capacity of the cranio-vertebral canal is at a maximum; secondly, that with the body in this position, when the weight of the trunk and limbs is taken off by lifting and supporting the body vertically there is a diminution in the capacity of the cranio-vertebral canal, but the diminution is a slight one. They also state that it would appear that by suspension the size of the spinal cord is increased in the adult of middle age to the extent of some 100 cubic millimeters.

Althaus thought it probable that in suspension the spinal cord is materially stretched, and by this means some of the adhesions from chronic meningitis are broken down, thus allowing the freer transmission of nerve influence. In a modified form I am disposed to accept this view. I can scarcely believe that by suspension the cord can be stretched sufficiently to break down adhesions; but I think there is probably sufficient traction made upon it to influence the adhesions between the dura and the thickened connective tissue, and that thus absorption of the exudation is promoted.

There is also another probable effect of the extension, which is to relieve pressure upon the nerve-roots.

The treatment of Pott's disease by suspension seems to have originated with Professor J. K. Mitchell, in 1826, who wrote a paper on this subject. He used this plan principally in children, and the suspension was effected by placing the child in a frame on rollers, with a curved iron bar extending over the head, from which the patient was partially suspended by the head-sling. This method

[1] Brain, 1891.

of treatment seems to have been very successful in the hands of Professor Mitchell, but it fell into disuse, until a few years ago attention was drawn to it by Dr. Benjamin Lee.

In 1889 Dr. S. Weir Mitchell published an account of the treatment of Pott's paralysis by suspension.[1] He reviewed the treatment of his father, Professor J. K. Mitchell, and related his own experience.

I had the privilege of seeing many of the cases that he treated by extension at the Infirmary for Nervous Diseases, and the admirable results that he attained have given me great confidence in this plan of treatment.

Dr. Weir Mitchell's conclusions in regard to suspension are that, by means of it, the spinal deformity is greatly lessened; that it should be used early in Pott's disease, and that no case of Pott's disease ought to be considered desperate without its employment. In regard to the mode of action of suspension he believes that the "pull probably acts more or less directly on the cord itself, and that the gain is not explicable merely by obvious effects upon the mechanical bony curve."

Dr. Leroy W. Hubbard read a paper before the New York Academy of Medicine, March, 1890, on "The Use of Suspension in Pott's Disease," and spoke very favorably of it.

Dr. Putzel, in the discussion on Dr. Hubbard's paper, said that his pathologic studies had led him to believe that the majority of cases of Pott's paralysis were not due to pressure, but to transverse myelitis, and in his experiencewith susp ension he considered it a method that was at best of only temporary relief.

Dr. Birdsall thought that the improvement in paraplegia from Pott's disease was due to the slight separation of the vertebræ and consequent improvement in circulation of the affected parts, particularly the nerve-roots.

Dr. L. C. Gray spoke favorably of suspension in the treatment of paraplegia.

Dr. R. H. Sayre said that, carried to excess, suspension failed to give relief in his experience.

Dr. Phelps considered that suspension should not be used when the vertebral disease was still active.

Dr. E. G. Brackett (*Transactions American Orthopedic Association*, 1891) reported several cases of paralysis from Pott's disease, in which suspension had given good results.

Dr. Benjamin Lee, in the discussion that followed Dr. Brackett's paper, said that he wished to claim for himself whatever honor might attach to having been the first to propose and use self-suspension in the treatment of Pott's disease, lateral curvature, spinal pressure, paralysis, and of the conditions known as spinal irritation. He says that the treatment by suspension is very old, that it was used by Ambroise Paré, and that he got the idea from Hippocrates.

Counter-irritation is useful in many cases as an adjuvant to suspension, and the best way of making this is by the actual cautery, that of Paquelin being the most convenient to use. Sometimes when, in spite of suspension and counter-irritation, the progress of the case is slow, benefit seems to follow the use of internal remedies that have the power of promoting absorption. I have found potassium iodid useful under these circumstances when given in moderate doses.

Of course, in connection with the means already used, it is of the first importance to improve the general health of the patient by the administration of iron and cod-liver oil, and by giving the best and most nutritious food that can be taken. Massage is a most valuable aid, and it should be practised daily by a person well skilled in its use. By this means the nutrition of the muscles is improved, the circulation is stimulated, and a larger amount of food can be assimilated.

The use of the plaster jacket is of value in connection with suspension, and it is best to have the apparatus cut down in front so that it may be removed at pleasure. When the patient is sufficiently convalescent to go about, the half-tanned leather jacket made by Gemrig is helpful in giving support to the spinal column and protecting it from jars and injuries.

When the paralysis remains stationary, notwithstanding the faithful employment of the means already suggested, the question of surgical interference is worthy of careful consideration. Within the past few years the operation of laminectomy has been performed in many cases for paralysis from spinal caries. The results of this operation have been so successful that, with favorable conditions as to the general health of the patient, the operation should be advised whenever the paralysis has resisted the treatment that I have described. The mortality in these operations is comparatively small, and the beneficial effects have been shown by the brilliant operations of Macewen and others.

In my opinion, however, the operation of laminectomy is not indicated in cases in which the paralysis is purely motor. The removal of the laminæ will not relieve pressure, and it is difficult, if not impossible, to remove the exudation on the anterior surface of the cord without injury to the cord itself; moreover, it is not easy to determine beforehand whether the motor paralysis is due to pressure or to myelitis. When an operation is decided upon, the neurologist can aid the surgeon by indicating the point at which the operation should be performed, and in determining this the schedule for the localization of the functions of the segments of the spinal cord, given by Starr in his book on the *Familiar Forms of Nervous Disease*, will be found useful.

The following cases illustrate the advantage of extension, combined with rest, in the treatment of paralysis from Pott's disease.

Case I.—John T., aged eighteen, a native of Ohio, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, February 16, 1888. He is of healthy family with no history of tuberculosis in any of the members. He had always been strong and healthy until September, 1886, when he was violently bumped against a tree by four of his schoolmates. He suffered acute pain in the spine at the time; the pain was also felt in the epigastrium and radiated thence into the legs and shoulders.

About three weeks after the injury a lump was

[1] American Journal of the Medical Sciences, May, 1889.

discovered in the dorsal region of the spine. He became progressively weaker, and by January, 1887, four months after the injury, he was unable to walk or to sit up. On admission he weighed eighty-four pounds. There was angular curvature at the seventh dorsal vertebra. He could sit up with the aid of a leather spinal jacket which he had worn for several months. He had apparently no power to move the legs. The knees and ankles were in a condition of rigidity; the knee-jerk was exaggerated; ankle-clonus, patella-clonus, and the toe-reflex were all present. The condition of trepidation of the legs, known as spinal epilepsy, was readily induced; the plantar reflexes were exaggerated, but no cremasteric or abdominal reflex could be elicited. Sensation was impaired but not lost. There was no loss of the functions of the bladder or rectum. There was a small bedsore over the sacrum.

The patient was ordered rest in bed and massage, and the Paquelin cautery was applied on either side of the angular curvature. At the end of a month suspension was made by seating the patient upright in bed and having the suspension-apparatus projected above the head of the bed. Two months later he began to sit up in a chair while suspended, and about this time he began to have slight power of motion of the toes, and soon after this the power to flex the feet and legs followed.

On July 23d, the patient was able to move his legs, drawing up the knees while lying on his back. Sensation was improved but not yet perfect. In October he began to walk about with crutches, and from this time he steadily gained in power and soon dispensed with his crutches, but still continued to wear his spinal jacket.

I had a letter from this patient a short time ago, in which he tells me that he has remained perfectly well and that he has a position of "motor-man" on an electric car in Cleveland, Ohio. He says that he works fourteen hours a day and is as active as anyone he knows, as he is able to jump off and on the car while it is in motion, and that he can run as well as he ever could.

In this case it will be observed that the paralysis became complete in January, 1887, and it was not until May, 1888, sixteen months later, that power of motion began to return.

CASE II.—Robert H., aged twenty-one, a shoemaker by occupation, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, December 12, 1892. He had been a patient at Dr. Goodman's clinic since March, 1888, and had been treated with a Kolbe brace for spinal caries. The disease had followed lifting a heavy weight.

On admission the patient complained of extreme stiffness in the legs, with pain in the back extending down the legs. The pain was very severe, and the rigidity of the legs almost prevented locomotion. There was no muscular wasting. The knee-jerk on the right side was exaggerated, but on the left side it could not be elicited. There was no clonus.

The patient was ordered massage, rest in bed, and extension for fifteen minutes daily in the chair, the time to be increased by five minutes daily. On December 22d it was noted that the patient was being suspended for one hour daily and that the legs were more supple. On March 25th the patient was sitting up while wearing a plaster jacket, but still complained of severe pain in the back, and for this the cautery was applied. This immediately relieved the pain in the back, but the man still complained of pain in the anterior part of the thighs. On May 7th he was discharged greatly improved. He was able to walk without trouble, had no rigidity of the limbs, and the pain in the back was only occasionally troublesome. There was now knee-jerk present on both sides; it was exaggerated on the left side, and on the right side it was slightly in excess of the normal reaction.

CASE III.—The patient is Daniel C. B., a mulatto, twenty-seven years of age, and was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases, April 10, 1893. His father, mother, and eight brothers are all living, and there is no history of tuberculous or of Pott's disease in the family. He is married and is the father of two healthy children. He never had rheumatism and denies venereal disease.

Nine years ago a curvature in the spine was noticed. He thinks it came from a strain. No abscess formed and the legs were not affected. He was in bed at this time for three months on account of weakness of the back, but the legs were not paralyzed. Since that time he has been steadily going about and doing his work as a janitor until three months ago, when he was taken down with influenza and was in bed for one week. When he got up he was able to walk on the first day; on the second day he became very weak in his legs, and on the third day he was forced to remain in bed. His legs became gradually helpless and there was marked pain, which was of a dull, aching character, in the back and on the left side. For six weeks before admission there had been spasmodic contractions of the flexors of the legs and thighs, lasting for a few minutes, and then he could extend the legs with his hands.

Condition on examination: The patient is a light mulatto, with pallid mucous membranes. He lies on his side in bed with the thighs flexed on the abdomen and the legs on the thighs. There is a marked kyphosis in the dorsal spine, but no scars of abscesses. His teeth are bad; his tongue is foul; the bowels are constipated, and he has hemorrhoids. There is no paralysis of the bladder or rectum, and, with the exception of a few uric-acid crystals, the urine is normal. There is complete loss of motion in the lower extremities, with the exception of very slight power to move the toes. The legs are in clonic spasm most of the time. Sensation is preserved, but it is slightly delayed. There are no bedsores, but there is marked wasting of the muscles of the thighs and legs. The knee-jerks are grossly exaggerated; ankle-clonus, the plantar, cremasteric, and abdominal reflexes are present; the toe-jerk on both sides is present.

The patient was placed at rest in bed and was ordered massage and the cautery to the spine; with head-extension, ten pounds for five minutes daily, and increased by five minutes each day. On May

1st, a plaster jacket was applied, to be worn continuously. This has given considerable relief and the patient is able to lift his left leg off the bed. On May 11th he was able to move the toes of the right foot much better. There were still involuntary contractions of the limbs, but these were not so painful. On May 20th, the patient complained of numbness in both legs, from the hips down, and there was impairment of sensation. The patient gradually improved until June 29th, when he again began to lose power in the legs, and from that time until July 23d the legs became almost as helpless as they were when he was admitted. On this date he was ordered potassium iodid, five grains three times a day, and the plaster jacket was reapplied. On August 8th, he was markedly better and from this time the improvement was steadily progressive until October 5th, when the following note was made:

There is no pain, no numbness, or tingling in the legs; sensation is normal. The movements of both legs are performed well in all directions, but they are weak. He can stand alone, and walks about the ward supported by the wheel-crutch. The plantar, cremasteric, and abdominal reflexes are normal; the knee jerks are exaggerated and spastic. There is no clonus. The feet and legs are still cold and sweat freely, and although there is still some muscular wasting it is much less than previously.

This case is notable: first, on account of the prominence of the nerve-root symptoms; secondly, because after improvement had set in there was a relapse; and, thirdly, on account of the apparent benefit from the use of the potassium iodid.

ACNE.

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The following definition of acne is taken from Jackson's *Diseases of the Skin*:

"Acne is an inflammatory disease of the sebaceous glands and the hair-follicles, due to the retention of sebum; it is characterized by an eruption of papules, pustules, or tubercles, upon the face, neck, shoulders, or chest; it usually begins at puberty and tends to run a chronic course."

In considering the subject of acne, a better understanding of the disease will be obtained by first briefly reviewing the structure and functions of the portions of the skin affected.

The sebaceous glands consist of two portions, the gland proper and the duct. The glandular portion is situated in the corium; the glands are of the racemose variety; the various acini of which these are composed, from two to twenty in number, open into a common duct which empties into the hair-follicle. Each follicle has two or more glands attached.

Embryologically, the sebaceous glands are to be considered as adjuncts to the hair-follicle, even though at a later period in adult life they exceed the follicle in size.

The sebaceous glands are divided by Sappey into three classes: First, those situated on the scalp, the bearded portion of the face, the axilla, and pubes, these being connected with hair-follicles that contain thick, coarse hairs, the hair-follicles predominating over the glands; second, those of the forehead, nose, cheeks, and chest, where the hairs are smaller—of the lanugo type—and the glands are large; and, third, those opening on the free surface of the body, not connected with hair-follicles, such as the glands situated around the corona glandis, the inner surface of the prepuce, the surface of the nipple, the vestibule, and the labia minora. Those of the second class are the most usually affected in acne.

In structure, the glands have a membrana propria and are lined with cubical or cylindrical epithelial cells, of several layers in thickness, these cells being a direct continuation of the cells forming the rete. The cells of the innermost layer undergo a fatty degeneration, and this fat, mixed with fatty acids, cholesterin, fat-crystals, and the remains of the cell-bodies, forms a mass—the sebum—which, passing out through the duct, is discharged into the hair-follicle, and serves to lubricate the hairs.

There have been many terms employed to designate the various grades of severity that acne may assume, but at the present time the disease is generally divided into two varieties, acne simplex and acne indurata; the former being superficially seated and papular or pustular in character, while the latter is deeply seated and pustular or tubercular.

The first step in the development of acne is an excessive formation of sebum in the glands. This sebum, instead of being poured out on the surface of the skin, becomes inspissated, remains in the duct, the opening of which becomes more prominent as the sebum increases. Frequently the plug of sebum becomes tipped with black. This constitutes the condition of comedo, or, popularly, "black-heads." At the same time, an increase of horny epidermis takes place around the mouth of the gland, with an abnormally light, yet firm adhesion over the opening. The simplest form of acne, most frequently seen on the forehead and chin—papular or punctate acne—is then present. These papules are pin-head in size, of a white or pinkish color, and on their summits are seen the black tips of the plugs of sebum. Subjecting one of these comedones to lateral pressure, the plug of sebum can be squeezed out. The black-brown color of this comedo-tip was formerly supposed to be due to dirt. Unna considers it as produced by a

normal pigment-constituent of the secretion of the skin, which he calls ultramarine, and which, under the influence of light, turns black; that such a pigment exists is denied by Krause. Kaposi, in his fourth edition, says he thinks that horny epidermis and fat, when they remain in contact with air for a long time, will become colored, and that atmospheric dirt is probably an accessory to this coloration.

The papular form may remain as such or go on to another form. The plug of sebum acts as a foreign body, and excites an inflammation in the gland-tissue, and we then have the acne papule larger, of a more deeply red color, and frequently with a surrounding areola. The condition of the tissues now being favorable for the development of pus-cocci, some of these gain entrance into the duct, and *pustular* acne is then the result. At this time one's patient presents the acne lesions in their various stages of development—comedones, large and small papules, and pustules. All of these constitute simple acne.

The disease may now remain in this condition, entirely limited to the superficial portion of the skin, and each lesion passing with more or less rapidity through these different stages. The pustules rupture or dry up, and the lesions depending on the grade of inflammation and suppuration which has been present, leaving more or less scarring, though this is usually not strongly marked.

After a variable length of time, if the disease is left untreated, it becomes more extensive and severe. The papules and pustules increase in number, and the individual lesions are larger, extend more deeply into the tissue, and the inflammatory symptoms become more severe; the tissues surrounding the glands are also involved, and the condition of *acne indurata* is then present. The disease is now characterized by lumps or tubercles, which are reddish or purplish in color, varying in size from that of a pea to that of a bean, and quite firm to the touch. Sometimes these lumps are so deeply placed in the skin that but little is seen on the surface, and they can only be appreciated by the touch. At first but few are present, and we have usually acne simplex, with here and there an indurated tubercle. After a time the tubercles become more and more numerous and prominent; several situated close to each other will apparently become matted together by the surrounding inflammation, and rough, irregular, lumpy masses are then seen and felt, reddish or purplish in color, hard, ofttimes very painful, and at times small abscesses may be present.

The skin of persons afflicted with acne is likely to be thick, coarse, and to have an oily or shiny appearance. In some, especially the young and robust, the skin is usually red and hyperemic, but generally the complexion is of a pasty-white color.

In considering the etiology and pathology of acne, three processes must be borne in mind: the comedo-formation, the inflammation excited in the gland and surrounding tissues by this plug acting as a foreign body, and the invasion of the pyogenic cocci causing suppuration.

The disease generally first appears at puberty and continues until full development is reached, say from the sixteenth or eighteenth year until the twenty-fifth or twenty-seventh, though it is frequently met with after this age. It is generally of more frequent occurrence and begins earlier in females. At the time of puberty there is a great developmental activity of the glands and hair-follicles. It is probable that in certain persons this activity of the glands is not only greater than it should be, but also that the product of such glands, which normally is a fatty or oily secretion, becomes perverted, and in addition, that the normal extrusive power of the gland is also deranged. At the same time, a parakeratosis of the surface and of the lining of the duct is taking place.

Certain individuals are more predisposed to acne than others, such as those with a thick, pasty complexion, and in such cases the mouths of the follicles are prominent. So-called scrofulous persons, those whose health is not the best, and persons with seborrheal eczema also manifest a predisposition.

The exciting causes are generally considered to reside in disturbances of the digestive, excretory, and sexual organs.

Whether disturbances of the sexual organs *per se* will produce acne has been questioned. That such disturbances and acne are ofttimes found in the same person is true, but it has been claimed that a lowered condition of the system generally and the influence that sexual derangements have upon the digestive organs can more frequently be blamed for the acne.

The statement is ofttimes made by female patients that their acne is worse at about the time of the menstrual period. A number of observations made by me during the past several years have shown that these patients were generally extremely costive and suffered from gastric disturbances; that when laxatives were administered and the diet carefully regulated as regards quality of food, especially avoiding the easily-fermentable foods, these exacerbations of acne did not occur. This fact would seem to disprove the statement made, unless it be argued that keeping the bowels clear reduced obstructive congestion of the pelvic viscera. On the other hand, a brother practitioner, whose labors are principally in the field of gynecology, has lately informed me of three patients under his observation whose acne always improved with the advent of or during menstruation.

It may be stated in broad terms that any cause that will lower the general health of a person will contribute to the development of acne. Over-eating, or the eating of improper food, as, *e. g.*, the excessive use of sugars and starches, which easily undergo fermentation in the stomach; over-drinking of malt or spirituous liquors, or of tea; constipation; excessive mental or physical work; the conditions of the system which give rise to gout, lithemia, oxaluria, uremia, or anemia; chronic malarial poisoning—all these are factors in the production of the comedone. Seborrheal eczema, and the condition of rosacea to which it leads, should also be recognized as important factors in the production of acne. The frequency with which seborrheal eczema is met with in acne-patients leads me to regard the association as more than merely coincidental. I think that very many cases of acne have their starting-point in the seborrheal eczema. Patients having the two diseases after being cured of them so far as the face is concerned, but failing to properly carry on treatment for the seborrheal eczema still remaining in the scalp will have a return of the acne with the next exacerbation of the seborrheal down on the face, and especially is this the case in patients past forty years of age.

Seborrheal eczema we find existing as slightly yellowish, or yellowish-gray, or slightly reddish, circumscribed, scaly patches occupying the forehead, temples, or neck, at the edges of the hair, on the cheek, or in the naso-labial fold, or more frequently, as a congested condition of the forehead, nose, cheeks, immediately beside the nose, and on the chin, associated with slight scaling or with papules from the size of a mustard-seed to that of a pea, sometimes smooth, at other times covered with yellowish, fatty scales; with this condition of the face there will always be more or less dandruff of the scalp.

Bearing in mind then the conditions that predispose to acne, the exciting causes and the pathologic changes that occur, we have an index to the measures to be pursued for its relief.

The regulation of the various functions of the body are familiar to all, and must be followed on the general principles that govern the treatment of these conditions. I shall, therefore, not speak of them, but consider the means directed against the disease itself.

As the comedones are the first exciting cause of the inflammation in the gland, they should be removed as soon as possible. For this purpose their mechanical expression by means of a comedo-extractor will be found of advantage. For the excessive formation of horny epidermis over and around the mouth of the follicle, mechanical or chemic means are necessary. Of the former, scraping with a curet, frictions with some coarse substance, such as finely powdered marble-dust, corn-meal, or pumice-stone, will effect the necessary change. As these means are not always agreeable to patients in private practice it may be better to try the chemic agents, such as salicylic or acetic acid, or the alkalies, such as potash-soap, spirit of green soap, liquor potassii, made up into ointments or pastes or lotions; or reducing agents, such as resorcin, sulfur, or the mercurial salts.

For the inflammatory reaction likely to be excited by the curetting or the energetic action of chemic agents, zinc oxid, carbonate of magnesia, corn-starch, ichthyol, will be found useful. As antiseptics, corrosive sublimate, boric acid, resorcin, and sulfur are among the best, and to restrain the excessive glandular activity and stimulate the skin to healthy action nothing is superior to sulfur.

To understand better the use of these various remedies in the different stages of acne let us suppose a case of indurated acne with large, red, painful tubercles and pustules, and consider its treatment. Having given all necessary attention and direction as regards the system generally and corrected all derangements, we will, if the patient permits, with a dermal curet scrape off the tops of the pustules and express their contents; with a dermal lancet or a small scalpel incise the tubercles and let out the pus found in them, and with the comedone-extractor press out comedones.

Bleeding should be encouraged for a short time by compresses dipped in a warm saturated solution of boric acid, the bleeding lessening the congestion and the boric acid at the same time acting as an antiseptic. Then to soothe the inflamed painful face zinc oxid and magnesium carbonate, with or without ichthyol, in lotion or in Bassorin paste, may be applied several times daily. After the reactionary inflammation has subsided a lotion containing mercuric chlorid is applied during the day and a resorcin-paste at night. The bichlorid acts as an antiseptic to prevent the formation of new pustules and also stimulates the glands to more healthy action, while the resorcin acts in very much the same way as does sulfur. If the horny epidermis is abundant, salicylic acid may be added to the paste. All of the pustules, tubercles, and comedones cannot, of course, be treated at the first consultation; therefore this mechanical treatment will have to be repeated until the face is in a fairly good condition.

The face should be washed daily with warm water and soap, and if the skin be thick, a potash-soap will be useful, while upon thin, sensitive, inflamed skins an ichthyol-soap will be of service. In either case the lather should be permitted to remain on the face for several minutes—from five to fifteen—rinsed

off with cool water, the face dried, and whatever remedy is employed, then applied.

When the acute stage of pustulation has subsided, stimulating remedies will come into service, and of these sulfur in some form is the best. The sulfur may be employed as an ointment; in the "lotio alba," made by mixing together solutions of sulfuretted potassium and zinc sulfate, to which some sulfur is then added, or it may be suspended in Bassorin paste, which has the advantage over ointments of drying in a short time, making a smooth, even dressing on the skin, keeping the remedy in close contact for a length of time, and of being easily removed with warm water.

In this way the disease will soon be brought under control. Then should come a period of after-treatment, the object of which is the prevention of relapses. Here the most service will be secured from the long-continued use of a feeble resorcin, or resorcin-sulfur, or resorcin-sublimate lotion.

Internally arsenic has long been held in great esteem. It will not be of service used alone, or during the acutely inflamed stage, but at later periods or when a condition of parakeratosis, exists, then, in conjunction with external remedies, it will do good.

Ergot has also been extolled, but my results with it have been disappointing, except that it is useful at times to lessen the vascularity of the face; but it has seemed to me that this could be better obtained by the use of local sedative and antiseptic remedies in a much shorter time.

When patients will not permit such surgical measures as I have mentioned, a slower course of treatment will have to be adopted. Antiseptic applications must be employed until suppuration ceases, combined with remedies to reduce excessive horny formation and to alter the action of the sebaceous glands.

The frequent and intimate association of seborrheal eczema with acne should direct attention to this condition, and especially after the acne has been cured should treatment be continued against the still existing dandruff. The remedies that will prove of most service will be resorcin, sulfur, boric acid, salicylic acid, chrysarobin—in fact all of those belonging to the class of reducing agents.

In the discussion of Dr. Holsten's paper, Dr. James McF. Winfield said:

The thorough manner in which Dr. Holsten has gone into the subject and the treatment of acne, leaves but very little for me to add, except perhaps a word as to the part genital reflexes play in the production of acne. In writing on acne great stress is put upon disturbances of the gastro-intestinal tract, as the great exciter of this common and exceedingly annoying cutaneous disorder. While the genital organs with their reflexes are to a greater or less extent ignored, I am inclined to the belief that the sexual tract is more likely to reflect its hyperemia on the face than upon any other organ or tract of the body. It is a fact that the simple form of this disease is observed during youth—a time of life when the sexual organs are in a state of unstable equilibrium; and furthermore, rosacea is more frequently observed late in life when the sexual and procreative powers are on the decline. We have all seen an active outbreak of acne on the face of a young woman about the menstrual period, while during the interim she is perfectly free from it. The gynecologists teach us that both acne and rosacea are common accompaniments of various diseases of the female genital organs, and, also, that after the cure of these diseases the acne disappears. American authors have paid more attention to the treatment of acne by remedies directed to the relief of genital irritation than foreign writers. Piffard, Dunslow, and Sherwell have written the most on this line of treatment. Dr. Piffard, in his work on *The Materia Medica and Therapeutics of the Skin*, published in 1881, recommends that strict search be made for sexual causes of acne and the proper therapeutic measures applied. In about the same year Drs. Dunslow and Hyde published their papers on the ergot-treatment of acne. They, however, thought this drug produced its good effect by its tonic action on the non-striated muscles surrounding the sebaceous glands. I have not seen much marked benefit from ergot upon acne in the male subject; but its good effects cannot be denied in certain cases in females when the menstrual functions are irregular; but in these cases the result seems to come from its oxytocic power rather than from any tonic effect on the involuntary cutaneous muscles. I have found it well to give ergot in doses of from fifteen to twenty drops, t. i. d., beginning four days before the expected period. This is given as a supplement to hot vaginal douches.[1] In 1884, Dr. Sherwell read a paper before the American Dermatological Association on "The Treatment of Acne in the Male Subject by the Passage of the Cold Sound." This paper was followed the next year by one by Dr. Dunslow entitled "Urethral Irritation in the Male the Cause of Certain Neuroses, and also of Acne." All of Dr. Sherwell's cases had hypersensitive urethras, while Dr. Dunslow goes a step further and reports cures following the relief of urethral strictures.

I am able to indorse Dr. Sherwell's method, or in fact any other method or treatment that will relieve the genital irritation which is so common in

[1] See paper published in Journal of Cutaneous and Genito-Urinary Diseases, March, 1891.

the disease under discussion. I have had excellent results from the cold sound in the male cases, and also from the hot vaginal douche in the female.[1] And I think it would be well to add to the treatment of acne some means directed to the relief of genital irritation.

THREE SPECIMENS OF TUMORS OF THE HEART: METASTATIC CARCINOMATOUS NODULE IN THE MYOCARDIUM, IMPLANTATION-SARCOMA OF THE RIGHT VENTRICLE, PRIMARY ROUND-CELLED SARCOMA OF THE EPICARDIUM.[2]

By LUDVIG HEKTOEN, M.D.,
of Chicago.

In his recent review of the literature concerning tumors of the heart, Alessandro Tedeschi[3] estimated that about 80 cases have been described, to which number he added three of his own. Martinotti collected 60 cases in 1886, and in 1891 Pil and Bret found 77. The *Index-Catalogue* of the Library of the Surgeon-General's Office at Washington—the volume finished in June, 1884—contains references to 85 cases, and this number does not include echinococcus-cysts, gummata, or tuberculous masses, and the *Index Medicus* from 1885 to 1892 inclusive has references to 21 additional cases, so that it would seem that the grand total at the present time must be about 110 instances. Under any circumstances this will indicate sufficiently well that tumors of the heart are among the rarest of conditions.

The majority of cardiac neoplasms are secondary, consequently, as a rule, either carcinomatous or sarcomatous, the first being the more frequent. It is very seldom that the heart becomes involved by direct extension through continuity and contiguity of tissue on the part either of a sarcoma or a carcinoma of an adjacent organ. The primary cardiac neoplasms are necessarily mesoblastic in origin, and instances of almost all the forms of mesoblastic tumors are described in connection with the heart. Berthensen[4] found 28 primary heart-tumors to include 9 sarcomas, 7 myxomas, 6 fibromas, 3 carcinomas (Krebsgeschwülste, etc.), 2 fatty tumors, and 1 cyst.

I shall describe an instance of each of the following forms of cardiac tumor, namely: A metastatic carcinomatous nodule in the wall of the right ventricle secondary to a medullary carcinoma of the breast; an implantation-sarcoma of the right ventricle, secondary to an osteo-sarcoma of the tibia; and, finally, a primary round-celled sarcoma, originating in the epicardium upon the anterior surface.

All of these cases occurred in the Cook County Hospital, of Chicago, during 1892 and the beginning of 1893.

Case I. *Medullary carcinoma of the breast; general dissemination; nodule in the wall of the right ventricle.*—A woman, fifty years of age, died from an ulcerated medullary carcinoma of the right breast. The post-mortem showed metastases in the lungs, the peritoneum, the liver, the Fallopian tubes, the uterus, and the pericardium. In the wall of the right ventricle at the right border was a mass 4 x 3 x 2.5 cm. in size, situated beneath the pericardium, and projecting up into the wall of the auricle; it was surrounded by large vessels, was very firm, grayish-white, and infiltrating; and in the immediate vicinity were smaller masses. The endocardium was not changed.

Manifestly, this metastasis occurred through the coronary arteries during the process of general dissemination.

Case II. *Spindle-celled osteo-sarcoma of the tibia; implantation-sarcoma of the right ventricle; extensive pulmonary dissemination.*—The following is an extract from the clinical record: A boy, twelve years old, was sent to the hospital with the diagnosis of osteo-sarcoma of the upper end of the left tibia. Disarticulation through the knee-joint was performed in January, 1892. In February recurrence took place at the lower end of the femur, and on May 14th disarticulation at the hip was performed. The patient was discharged four weeks later in good condition, but was readmitted July 30, 1892, into the service of Dr. C. A. Earle, on account of shortness of breath, nocturnal cough, and loss of flesh and of appetite. The examination then showed: Anemia; no local recurrence; the left chest moved less than the right; there was dulness on percussion over the upper third of the right lung, and over the middle third of the left posteriorly; bronchial breathing and resistant bulging of the intercostal spaces were present. The bones and joints, as well as the abdominal organs, were apparently normal. On August 4th the area of dulness over the left lung had extended downward. There was no palpable apex-beat, but epigastric pulsation could be made out; the sounds were rough, the first sound being almost changed into a murmur. On August 8th flatness was noted over the entire left lung, the heart's dulness not being distinguishable. The intercostal spaces were bulging over the flat areas. The sputum contained large, nucleated cells, but no tubercle-bacilli (ten slides, Dr. Eastman). Weakness and dyspnea increased, and death occurred August 14th, about eight months after the appearance of the first swelling upon the left tibia. The clinical diagnosis was secondary pulmonary sarcoma.

The post-mortem examination showed no recurrence in the tissues about the hip; the sciatic nerve presented microscopically an amputation-neuroma.

[1] Ibid.

[2] The specimens were presented to the Chicago Pathological Society, Oct. 10, 1893.

[3] Prag. med. Wochenschr., 1893, Nos. 11 and 12.

[4] Virchow's Archiv, Bd. cxxxii, H. 3.

There were no growths in any of the vessels below the heart or in any of the abdominal organs. Externally the heart presented an unusual prominence along the right ventricular border, which could be felt to be due to a nodular growth in the right ventricle. The heart weighed 250 grams. It was found that from the wall of the right ventricle along the right border sprang a lobulated mass of white, hard tissue which formed an intra-ventricular, nodular growth filling very nearly the whole cavity, projecting up underneath the tricuspid valves, and leaving only the upper part of the ventricle free to transmit the blood into the pulmonary artery. This mass was grayish-white, firm, containing in some places hard bony masses; it extended in between the muscular trabeculæ and down into the myocardium of the ventricle; the free surface was smooth, nodular, free from thrombotic deposits and from evidences of surface-disintegration. Otherwise the heart was normal. In spite of the manifest stenosis of the tricuspid orifice there was no hypertrophy or dilatation of the right auricle.

The lungs were of increased volume and weight, filling the chest to distention. They contained huge masses of whitish-gray tumor-tissue, which in some places grew into the bronchi, which thus communicated with foci of mucoid degeneration; these masses crowded the pulmonary parenchyma in all directions; they were sharply defined, almost encapsulated, in places undergoing mucoid degeneration, but mostly dense and hard, containing distinct osteoid districts that nicked the knife and scratched the palpating finger. The microscopic diagnosis was: Small spindle-celled osteo-sarcoma of the heart and the lungs. The structure was so typical as to render any detailed description quite unnecessary. In some places mucoid degeneration was present. Islands of osseous tissue were present in the cardiac as well as in the pulmonary growths.

It is to be regretted that a very minute and painstaking examination of the heart was not made during life, with a positive diagnosis of its condition in view, because it does seem probable that under the circumstances an approximately correct opinion could have been reached, although it must be acknowledged that the pulmonary lesions presented overwhelmingly prominent symptoms and signs. Thus the heart's dulness could not be distinguished on account of the adjacent pulmonary tumor-masses.[1]

The absence of hypertrophy of the right auricle, which the anatomic condition seems to have rendered unavoidable, may be quite rationally explained as due to the increasing cachexia, which is in accordance with the views generally held as to the absence of cardiac hypertrophy under analogous local and general states. Then again the marked diminution in the size of the cavity of the right ventricle may in part explain the absence of the hypertrophy, as the blood was probably forced directly through the upper part of the ventricle into the pulmonary artery.

Osteo-sarcoma of the right ventricle, due to implantation, and secondary to osteo-sarcoma of left tibia. (Case II.)

Another very interesting feature in this case is the mode of formation of the metastasis in the right

[1] Berthenson's article, "Zur Frage von der Diagnose primärer Neoplasmen des Herzens," loc. cit., covers this portion of the subject thoroughly.

ventricle. The metastatic process was confined entirely within the limits of the lesser or pulmonary circulation, into which sarcomatous emboli were introduced from the primary or the recurrent tumors in the left lower extremity through the blood-current in the ascending vena cava. In reality, the metastasis in the right ventricle depended either upon implantation upon the endocardium of sarcoma-cells coming directly from the primary or recurrent tumors, or it was due to infection carried back again from the secondary pulmonary growths. Sarcomatous emboli from the lungs might under favorable circumstances reach the right ventricle along either of the two following routes:

1. Through the pulmonary veins, the left auricle and ventricle into the coronary arteries, lodging in the capillaries of the myocardium; this route brings the systemic circulation into play, and in the absence of generalization of the secondary tumors, which would seem well-nigh unavoidable under these circumstances, any further discussion upon this particular point is unnecessary.

2. Through the bronchial veins, the vena azygos major and the superior intercostal vein, the superior vena cava, into the right auricle and ventricle, endocardial implantation of the sarcoma-cells leading to the formation of the large metastatic growth. Consequently there is practically no other explanation to be offered of the mode of growth of the tumor in the right ventricle in this case than by implantation directly upon the endocardium of sarcomatous cells or a mass coming through the inferior cava from the primary or recurrent tumors, or through the superior cava from the secondary pulmonary growths. In all likelihood the implanted cells came directly from the tumors in the extremity, along with the other emboli which were carried directly into the pulmonary capillaries. Of course it is not at all impossible that the implantation-sarcoma in the right ventricle distributed cells and masses into the lungs from time to time.

The instructive observations of a number of pathologists showing free tumor-cells and particles in the blood have, of course, a very direct bearing upon the question of growth from endocardial implantation. Bozzolo found tumor-particles in cruor masses in the right ventricle; v. Recklinghausen found sarcoma-bits in the right ventricle growing upon the endocardium between the papillary muscles; and Rieder, Weber, Lücke, Paulicki, Birch-Hirschfeld, and Laveran are cited by Tedeschi[1] as having made similar observations. Tedeschi himself studied an instance of recurrent round-celled sarcoma of the thigh, during the growth of which there developed some 300 metastases, and he found in the clots in the heart-cavities numerous white particles consisting of tumor-cells; in this case the heart contained innumerable metastatic nodules, and he very properly regards the cell-masses in the blood as indicating the mode of dissemination.

In this case, then, the course of events may be outlined in this way:

1. Primary, small spindle-celled osteo-sarcoma of the tibia; recurrence in the stump after amputation through the knee-joint in January, 1892.

2. Dissemination into the pulmonary circulation before disarticulation at the hip, *i. e.*, some time before May 14, 1892.

3. Death from pulmonary and right intra-ventricular metastatic sarcoma, August 14, 1892.

4. The growth in the right ventricle came from direct implantation of sarcoma-cells upon the endocardium, and subsequent development in the direction of least resistance, *i. e.*, out into the cavity and between the muscular tabeculæ.

Case III. *Primary round-celled sarcoma of the epicardium.*—An American Indian woman came into the Cook County Hospital moribund and died without a clinical record of any kind being obtained, except that she was fifty years old. She was quite well nourished. The post-mortem examination showed a fatty liver, pulmonary emphysema, and chronic nephritis. The following is a description of the heart: There is firm and complete pericardial obliteration; after carefully removing most of the parietal pericardium and cutting off the vessels near the base of the heart, a mass including a tumor which weighs altogether 448 grams remains. Situated upon the anterior surface of the heart is a tumor, shaped something like a cone, the base being the upper, and the apex the lower limit; the long diameter from base to apex is 8 cm., and the diameter of the base itself is 7 cm.; the interventricular septum passes under the center of the mass, which considerably overlaps the commencement of the pulmonary artery. This tumor appears to spring from the epicardium, and between the posterior surface and the myocardium proper is a layer of yellow fat, while the connection with the pulmonary artery is quite intimate. Externally the mass is covered by a thin layer of fibrous tissue—the epicardium—except posteriorly, where the capsule is continuous with the rest of the epicardium. The growth is quite firm and a little lobulated. Its cut surface is grayish-yellow, smooth, glistening, and homogeneous; large blood-spaces appear in the section. Internally the heart is quite normal, there are no endocardial changes, and the ventricular cavities and walls are not larger or thicker than normal.

There were no growths in any of the other organs examined, but unfortunately the investigation as to this point was not quite thorough enough, as it did not include the intestines and the brain, bones or joints.

Microscopic appearances. At the periphery of the mass is a quite thick layer of fibrillated connective tissue, in which are many large and irregular

[1] Loc. cit.

spaces, partly or wholly filled with blood. From this capsular layer of fibrous tissues, interlacing bands of varying width pass into the tumor proper, forming spaces of different sizes. The tumor is otherwise made up of round cells, reproducing quite typically the small round-celled sarcoma. The cells are, comparatively speaking, small, with large nuclei that stain deeply. In many places the tumor consists of diffuse areas of infiltrating round cells, separated by a faint and delicate intercellular network; in such districts, small, thin-walled blood-vessels containing blood occur occasionally. In other places again the spaces alluded to are filled closely or loosely with the round cells, and here the appearances are not at all unlike those seen in sections of certain carcinomas, but there is usually an intercellular network to be made out connected with the grosser bands of fibrous tissue. There is no pigment present. In conclusion it may be said that this tumor in part presents the structure of a small round-celled sarcoma, in part that of the so-called lympho-sarcoma.

This then is without much, if any, doubt a primary sarcoma of the epicardium of the anterior surface of the ventricles, and it is interesting not so much on account of its structure as on account of its very unusual point of origin, namely, the sub-epicardial areolar tissue.

In this case it is also exceedingly regrettable that a thorough physical examination could not be made, because it would have been very instructive to have a record of the physical signs presented on the part of the heart. Here again there is noted absence of hypertrophy and dilatation of the heart, although the weight of the tumor itself, as well as the pericardial adhesions, would seem to be ample causes of increased labor for the heart. The post-mortem examination did not disclose any satisfactory explanation of the absence of hypertrophy.

COLUMBUS MEMORIAL BUILDING.

CLINICAL LECTURE.

CARCINOMA OF THE UTERUS.

A Clinical Lecture delivered at the Philadelphia Hospital, October 7, 1893.

BY E. E MONTGOMERY, M.D.,
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GENTLEMEN: The case I bring before you this morning is a woman with the following history: She is fifty-two years of age, married, and the mother of seven children. Her mother died from some uterine disease after a year's sickness. She menstruated regularly, excepting as interrupted by gestation and lactation, until forty-five years of age, when she had an attack of typhoid fever and the menses never subsequently reappeared. She had had a profuse leukorrheal discharge for a number of years; had been treated at one time for uterine disease; and after the birth of her last child, some twelve years ago, she was operated upon for a lacerated cervix. In the last two years the discharge has been more profuse and has had quite an offensive odor. Eight months ago, after lifting some heavy weight, she had an attack of flowing, and since then she has had repeated attacks of hemorrhage. She entered the hospital a few weeks ago for treatment.

Taking such a history you will, I am sure, come to the conclusion that this patient is suffering from a grave constitutional condition. Introducing my finger into the vagina it comes in contact with nodular projections, more marked on the anterior wall, and as the finger passes up I find that the whole of the anterior wall of the vagina is involved, producing marked thickening, with irregular projections. This extends up to the uterus. The uterus itself and the upper part of the vagina are one mass of diseased tissue. I am unable to show you this, because the mere introduction of the speculum to separate the parts and expose the vaginal walls, would result in a great deal of pain to the patient, probably also in a profuse hemorrhage that would require tamponing to control it, so that the slight information a few of you would derive by such exposure would not justify the discomfort to her.

I have sent the patient out, for the reason that I do not wish to discuss before her the gravity of her symptoms. You will have noticed that her face was pale, anemic, and of a dirty-straw color. She has lost flesh and strength and suffers continuously. This is a case of unquestionable epithelioma of the uterus and vagina. In such a case, having reached the development it has in this patient, there is no condition with which it could be confounded. Consequently the diagnosis is rapidly made.

This class of cases is among those in which it is extremely important that an early diagnosis should have been secured, for if the disease is permitted to continue until it has reached the stage it has in this patient, there is but one inevitable termination. Our hands are practically tied, and we can accomplish nothing more than to palliate the more unpleasant symptoms. I cannot too strongly urge upon you the importance of careful examination in every case in which there is reason to suspect malignant disease; even under the best circumstances the disease is so insidious in its onset that it may have reached a serious stage before the patient comes under our observation. Then, too, the natural modesty of the patient compels her to neglect consulting the physician as long as she possibly can; and with the belief of many patients that they must undergo certain marked phenomena at this period of life, they wait, hoping that the unusual phenomena are but the premonitory symptoms of the climacteric period. It is to be regretted, but fortunately not so frequently as formerly, that many physicians console their patients at such times with this hope, and fail to subject them as they should to a careful examination, to determine the cause of the condition. Let me impress upon you the importance of making a careful examination, if necessary, at the price of your continued attendance upon the patient, for you cannot afford to go on in attendance upon a patient when you suspect the possibility of a grave disease and do not have the permission to make the necessary examination to determine its existence. It

is far more dignified and more to your credit to absolutely decline to continue in your attendance upon a patient who will not submit to necessary examination.

What symptoms should lead us to suspect that malignant disease is present in any individual case? The symptoms that are in every case most marked and that should arouse suspicion, are hemorrhage, pain, and offensive discharge. These symptoms are not present in every case, nor do they occur in regular order. Pain may be entirely absent during the entire progress of the disease, and in some cases only marked in the later stages. In some patients the first symptom will be a smart hemorrhage; in others a profuse watery discharge will exist for a length of time. Malignant disease is most likely to occur at or near the climacteric, so that age is to be considered in eliciting the history and in leading us to suspect such disease. It is well, however, to keep in mind the fact that it is not confined to any particular age, as I have seen cases of as serious disorder in women of but twenty years of age as in the patient whom I have just shown you. It is also more likely to occur in women who have borne children, as a result of the injuries to which the cervix is subjected during the progress of parturition. It may occur in women who have borne no children, or in the unmarried. In the latter, however, it is more likely to affect the mucous membrane of the body of the organ. The site of the disease is usually the cervix; in fact, it occurs in the body of the organ in only about 2 per cent. of the cases in which the uterus is involved. We can understand why the cervix should be the part affected, for the reason that it is the portion of the uterus that is most frequently subjected to injury during parturition, and in which the injury is likely to produce the greatest amount of subsequent irritation.

Generally the earliest symptom is an increase of bleeding during menstruation; or, a patient may suffer from slight discharges of blood, or from a leukorrheal discharge streaked with blood, during the menstrual intervals; or, a patient who has ceased to menstruate may after months, or even after years, be taken after a little exertion with a smart hemorrhage. This may subsequently recur at frequent intervals, and finally there may be a continuous bloody discharge. Another early symptom is the offensive discharge. This is thin and watery in character, having the odor of decomposing tissue. Pain may occur early in the disease, and is more likely to be present in those cases in which the cervix becomes extensively infiltrated, the infiltrate causing pressure upon the terminal nerves.

Pain, hemorrhage, and profuse discharge soon lead to emaciation and loss of strength. The means that are taken to allay the pain produce interference with general nutrition, causing the patient to rapidly break down. You must keep in mind the fact that the disease in its origin is a local one, and if we are enabled to remove it before the constitutional symptoms have developed, or before the disease has passed beyond its original site, we may feel hopeful of securing a radical cure. The progress of the disease, however, is so insidious, and it is so difficult to determine when the disease-agency has been carried from the source of origin, that it is not wise in the individual case to promise certain relief. In some cases in which the disease is extensive in character, you will find that an operation results in cure, while in others with apparently but slight involvement there will be a recurrence. The occurrence of any of the symptoms mentioned, or of hemorrhage in any patient, should be an indication for most thorough physical examination.

You will ask: Is there any condition that may be mistaken for carcinoma, or with which the latter may be confounded? By physical examination we usually find that the disease has begun on one or the other lip, or near the canal of the cervix; that it has resulted in hypertrophy of the papillary layer, cellular infiltration, and the development of tissue that is extremely friable, that breaks easily under the touch, with consequent hemorrhage. When the disease has existed for a length of time, this tissue may break down, leaving an ulcerated or excavated cavity covered with a foul, disagreeable discharge, from which hemorrhage is likely to result. In other cases we may find marked hypertrophy of the tissue and the formation of cauliflower growths, which are very friable and break down under the touch, causing profuse bleeding. In the majority of these cases we must make our examination by the touch. When the uterus is extensively diseased, the introduction of the speculum is likely to result in bleeding. In the early stages of the disease, if we are in doubt as to the condition, the diagnosis may be confirmed by removing a section of the tissues and subjecting it to microscopic examination. In a case in which hemorrhage occurs, if it is found that the cervix appears healthy, but that the bleeding still continues, the uterus should be carefully dilated and its cavity explored, with the finger if necessary, to determine the cause of bleeding.

Thus we recognize that hemorrhage may result from a variety of conditions, and that it is not always necessarily an indication of the existence of malignant disease. Thus, it may take place from a hemorrhagic endometritis, from interference with the circulation, as in the uterus, from disease of the ovaries or pelvic exudation, the presence of ectopic gestation, or growths within the walls of the uterus itself. Thus a woman suffering from a fibroid growth may have the circulation interfered with to such a degree as to lead to partial sloughing, to ulceration of the mucous membrane, to sloughing of the superficial tissue, or to necrosis of the entire mass. In such cases we would necessarily have profuse offensive discharge. We shall have the patient suffering from symptoms of septic absorption. The dilatation of the cervix to permit the introduction of the finger will readily disclose the character of the condition. Sloughing fibroids will still be of sufficient resistance and tenacity to prevent breaking down under the finger, while in carcinoma or epithelioma of the uterus the surface will be infiltrated, giving the sensation of possible sloughing, the friable mass resting upon a firm, indurated base.

Having had our suspicions of malignant disease confirmed by examination, it now becomes a question of what shall be done in order to afford the patient immunity against its return. A variety of operative procedures have been suggested, some amputating the cervix by either the knife or the scissors, or by the galvano-cautery, as has been recommended by Byrne, of Brooklyn. Another operation is that devised and recommended by Baker, of Boston, which consists of high amputation of the cervix, amputating it flush with the

attachments of the vagina anteriorly. These operations, however, will remove only a portion of the cervix. We must remember that the disease extends continuously and contiguously. If the smallest portion of the tissue is left in which malignant cells have wandered, there will be a return of the disease, and the outlook is consequently bad. For this reason it has been my habit to urge that in every case in which the disease is confined to the uterus the operation shall be extirpation of that organ. I believe that this is as thoroughly indicated in carcinoma of the uterus as would be the removal of every vestige of the mammary gland if one lobe was involved in malignant disease. In studying the indications for any operation we have to consider it from different standpoints: First, with reference to the influences upon the patient, and to the unmolested continuation of the disease, and, secondly, as to the mortality of the operative procedure proposed.

As to the patient, we have in this condition a disease in which the outlook for the patient is bad. We have as yet been able to obtain no remedies that have any marked influence upon the progress of the disease; consequently constitutional measures are ineffective. The patient is absolutely doomed unless a radical operation can save her. Even this would not justify the performance of an operation of a grave character, one in which the chances for the return of the patient to health are meager. Removal of the uterus has not proved a very dangerous procedure. It has been my good fortune to operate in twenty-one cases with but a single death, and a mortality so slight as this does not indicate that the operation is an exceedingly dangerous one. The indications for the operation may then be considered to be, first, the existence of malignant disease in any portion of the uterus, however slight, providing the uterus be still movable; second, the mere existence of fixation of the uterus need not necessarily be considered a contra-indication to operation, as this fixation may be due to inflammatory rather than to malignant infiltration, and the malignant disease may be secondary to the inflammatory condition; indeed, the implantation may be upon a soil better fitted for its development by the previous inflammatory disease. We may be able to determine by careful examination whether the fixation is due to inflammatory exudate or to malignant infiltrate. This is accomplished by making a rectal examination, which should be a part of the routine in every first examination. Examining through the rectum, we may find that although the disease is extensive in character, the mucous membrane is movable from the mass of exudate. In malignant disease, however, it will be found that the mucous membrane is not movable, but is fixed. The tissue infiltrates it, giving rise to a hard, rigid surface. Then, too, in the case of infiltration, it will be found that the surfaces are uneven, not smooth and regular in outline, as will be the case with exudation.

When we come to the consideration of the operation itself, we have a variety of methods of procedure, some operators preferring, in removal of the uterus, that the broad ligaments shall be ligated in sections, others advocating ligation *en masse*, and some advocate stitching the peritoneum to the vaginal wall as the operation proceeds. Others stitch the peritoneal surfaces together, others the peritoneal surface and the vaginal surface separately; some use drainage, others none; some preferring drainage by means of tubes, others by gauze. By some the broad ligament is ligated, and each section cut off, allowing the last portion to be drawn further down; some, instead of drawing the uterus straight down, invert the fundus forward; others invert it backward; then tying off the uterine and ovarian arteries on either side, the uterus is cut away. In all the operations that I have performed I have preferred to use the clamp.

The method of procedure is as follows: First, the patient is thoroughly prepared for the operation by frequent vaginal irrigations; from several days to a week before the operation the uterus itself, with as much diseased tissue as possible, is carefully curetted, the diseased prolongations cut away, the vagina cleaned and packed with iodoform-gauze. This may be repeated at intervals of two days for a week before the operation is attempted. In beginning the operation the cervix is seized with a pair of strong volsella forceps, and for this purpose I prefer those instruments having four prongs to the blade. They are much better than the two-pronged instruments, because, in having a firm instrument like this, it is certain to seize some healthy tissue and will consequently promote this being drawn down. The cervix is then encircled by a knife, and the vaginal mucous membrane cut through as far away from the surface of the disease as the position of the bladder and orifice of the urethra will permit. Having cut through the mucous membrane, we then dissect up with the fingers, pushing the bladder until we reach the peritoneum posteriorly. We also push the tissues off until the peritoneum is reached, when the latter is grasped with hemostats and incised, the opening torn larger, and a sponge with a string attached is passed through it into the peritoneal cavity, to hold up the intestines and also to prevent them from being soiled by the bladder discharge. The peritoneum is then opened anteriorly, the uterus now remaining attached by the broad ligament on either side. With a pair of modified Greig-Smith clamps one blade is placed behind the broad ligament and the other in front, the clamps screwed down until the tissues are firmly held and are crushed in the grasp of the clamp. With the clamp applied upon one side the uterus is then cut off, leaving the clamp in place. This permits the uterus to be dragged down and delivered. The large second clamp can be applied with much less difficulty outside. Having clamped the second broad ligament, the uterus is cut away and the clamp is then replaced in the vagina, projecting into the abdominal cavity. The parts are irrigated with hot water, dried with sponges, the abdominal sponge is removed, and a piece of iodoform-gauze is carried over the end of each clamp to keep the intestines away from it, and also to prevent them from coming in contact with the denuded surfaces, which would result in improper union and in subsequent contraction, or possible obstruction of the intestine. This method of procedure has the advantage that it is expeditiously carried out; that there is no danger of the ligature slipping and hemorrhage taking place; that free drainage is afforded, and the clamps may be removed at the end of twenty-four hours without fear of hemorrhage. The drainage is free in such patients, convalescence is usually undisturbed, and if antiseptic or aseptic precautions have been observed the recovery is usually uninterrupted. In the patient we had before you to-day,

however, no such plan of treatment can be exercised. By no operative procedure can we hope to remove the entire disease. To accomplish its complete removal would necessitate the removal of the septum between the vagina and the bladder, and the removal also of the posterior wall, so that it is not worth while attempting a dangerous operation which can by no means be a radical one.

CLINICAL MEMORANDUM.

A CASE OF DEPRESSED FRACTURE OF THE SKULL IN A CHILD, WITH AN ENORMOUS CLOT; OPERATION; RECOVERY.

By WM. N. JOHNSON, M.D.,
of Germantown, Pa.

Sallie R., eleven years of age, was admitted to the Germantown Hospital on Saturday, July 29, 1893. Two days previously she had fallen from an apple-tree a distance of fifteen feet, and struck directly on her head, and immediately became unconscious. How long this primary unconsciousness continued is not definitely known, for after a time she recovered sufficiently to walk to her house, about five hundred yards distant. While there, she again became unconscious, and a physician was summoned, who did not recognize her true condition until Saturday morning, when he advised removal to the hospital. Upon admission, the following condition was present: The temperature was 97°, the pulse 135, the respiration 26. There was total unconsciousness, even to absence of the conjunctival reflex. Ptosis of the right eyelid was present, and the right pupil was widely dilated and insensible to light. The left pupil was normal. Urine and feces were passed involuntarily. I am unable to state whether there was hemiplegia or not, as owing to the precarious condition of the patient, examination in this direction was not pushed.

When the child's head was shaved, a large depression over the right side, between the frontal and parietal eminences, could be made out, although no external wound was visible.

No anesthetic being required, and with antiseptic precautions, an incision about three inches in length was made over the central portion of the depression, and a large stellate fracture, involving the lower border of the parietal bone, and the adjacent portion of the temporal bone, was revealed. With a thumb-gouge, an opening large enough to admit one blade of the rongeur forceps was made, and with this latter instrument three square inches of bone were removed, disclosing a large clot between the dura and the bone. This clot was so extensive, being fully the size of a seven months' placenta, that it was necessary to remove it piecemeal, and in order to do this, a considerably larger quantity of bone had to be chiselled away. When the clot had been entirely extracted, the space left was large enough to allow the hand to sweep downward as far as the orbital plate of the frontal bone, and upward to the longitudinal sinus. The brain-substance did not expand after the pressure was removed, and there was considerable capillary oozing from all that portion of the dura underneath the clot. To control this the cavity was thoroughly washed out with a hot solution of boric acid (gr. x : ℥j) and afterward filled with a 25 per cent. solution of boroglycerid, which was allowed to remain.

At this time the patient's condition seemed hopeless, the pulse being 178 and the heart-sounds barely perceptible. Two large drainage-tubes were introduced into the wound; the scalp was rapidly approximated by means of four or five silk sutures, a large antiseptic dressing applied, and the girl was put to bed, surrounded with hot-water bottles, and a hypodermatic injection of strychnin, gr. $\frac{1}{30}$, administered.

At 3.30 P.M., half an hour after the completion of the operation, the pulse was 130, the respiration 34, and the temperature 101.4°. One hour later the girl opened her eyes, recognized her father, and complained of pain. At midnight she was perfectly conscious, and passed her discharges voluntarily. She was given calomel in one-tenth-grain doses every half-hour, and strychnin sulfate hypodermatically, gr. $\frac{1}{30}$, every third hour, with milk-diet, and whiskey in moderate quantities.

The following day she complained of "seeing everything double." The right pupil was still widely dilated, but responded slightly to light. Ptosis of the right lid continued. At the end of the second week diplopia had disappeared, and the ptosis was markedly improved, although the dilatation of the pupil still continued.

The greater portion of the wound healed by granulation. The temperature never exceeded 101.4°, and this was immediately after operation, and the pulse dropped from its highest point—178, during the operation—to 81, on the third day, and remained there.

Then followed an excellent and uninterrupted recovery, and the child was discharged cured on September 9th, six weeks after operation. On September 15th there was still a slight dilatation of the right pupil. The wound was entirely healed, with the exception of one small sinus, and considerable regeneration of bone had taken place. On October 30th the wound had entirely healed, pulsation of the brain being distinctly visible over the scalp. There are no symptoms at present, except possibly a little slowness of mental activity.

5346 Main Street.

MEDICAL PROGRESS.

Transient Bilateral Amaurosis following Concussion.—Sealy (*British Medical Journal*, No. 1711, p. 843) has reported the case of a boy who, while working in a coal-pit, was struck on the back of the head by a lump of coal and was insensible for about ten minutes. On regaining consciousness he noticed that vision was poor in the left eye and a half-hour later the eye was completely blind. When seen, some two hours after the accident, vision was also lost in the right eye, although light-perception remained. The eyes appeared normal and the pupils reacted to stimulation. No fracture of the skull could be detected. A purgative was ordered and it was directed that the boy be put to bed. Several hours later, the right eye, like the left, had become completely blind. Small doses of potassium iodid were prescribed. On the following day the condition was unchanged, but on the next day light-perception had returned to the left eye. A day later objects became distinguishable to the left eye, and the right was capable of recognizing light. On the fourth day vision was per-

fect in the left eye and almost so in the right. On the sixth day the boy was in quite as good a condition as he had been before the accident, and so continued.

Anuria from Compression of the Ureters by a Uterine Fibroid Relieved by Operation.—TUFFIER (*La Semaine Médicale*, 1893, No. 59, p. 468) has reported the case of a woman, forty-eight years old, who came under observation on account of retention of urine of three days' standing, together with a history of having had a subperitoneal uterine fibroid removed two years previously. There was also constipation. The introduction of a catheter showed the bladder to be empty. Vaginal examination disclosed the presence of a tumor wedged in the pelvis and obviously compressing the ureters and the intestines. In view of the gravity of the situation and of all of the circumstances, abdominal hysterectomy was undertaken and successfully carried out. Urine began to flow on the following day, and by the fifth day the state of the urinary secretion had become normal. Barring the temporary persistence of a small fistula the post-operative course of the case was uncomplicated.

Spontaneous Rupture of the Heart.—DEANE (*Australian Medical Journal*, No. 9, vol. xv, p. 471) has reported the case of a woman, seventy years old, who, in ordinary health on retiring at night, was found dead in bed in the morning. She had had an attack of influenza more than a year previously, and had never afterward felt well. For some time there had been attacks of faintness on slight exertion. Upon post-mortem examination the left pleura was found filled with serum and presenting extensive adhesions. The base of the left lung was congested. The pericardium contained a large clot, on removal of which a ragged rent was found at the apex of the left ventricle, large enough to admit the tip of the little finger. The muscular structure of the entire heart was of a putty-like color and exceedingly friable. The valves were normal. Around the rent and extending for a distance of one inch from it, there was a tumefied, dark-red infiltration of the muscular tissue.

A Hitherto Undescribed Symptom of Complete Facial Palsy.—At a recent meeting of the Ophthalmologic Society of Heidelberg, GOLDZIEHER (*Centralbl. f. Nervenheilk. u. Psychiatrie*, October, 1893, p. 478) expressed the opinion that the teaching that the trigeminus is the secretory nerve of the lacrymal gland is not to be depended upon, as this function belongs to the facial nerve. The fibers that transmit the necessary impulses enter the spheno-palatine ganglion with the nervus petrosus superficialis and pass hence in the temporo malar nerve. In case of a lesion seated in the bony canal and at the level of the geniculate ganglion, and attended with complete palsy of the seventh nerve, including the veil of the palate, there follows a suppression of the lacrymal secretion and a cessation of the reflex flow of tears.

Angina due to Oidium Albicans.—BRANDENBURG (*Corr.-bl. f. Schw. Aerzte*, 1893, No. 20, p. 709) has succeeded in demonstrating the presence of oïdium albicans in the whitish deposits in two cases of angina in adults. Both cases presented mild fever and dysphagia, as well as gastric derangement. The small punctate deposits presented on microscopic examination a large number of bright spores and long mycelial threads. In one case the morbid process remained confined to the vault of the palate and the uvula; in the other the deposits extended to the gums. The covering of the tongue and the lining of the cheek escaped. Therapeutically, potassium chlorate was employed as a gargle, and topical applications of dilute tincture of iodin were made.

THERAPEUTIC NOTES.

For Parenchymatous Metritis.—CHERON (*Medical Press and Circular*, No. 2840, p. 375) recommends the following line of treatment: The nourishment should consist of two quarts of milk in small quantities, frequently repeated. For the relief of pain and the reduction of temperature five grains of phenacetin may be given every six hours, and hot antiseptic fomentations applied to the abdomen as follows: A large layer of cotton is plunged into hot water, wrung out, sprinkled with from forty to fifty drops of tincture of opium, placed upon the abdomen and covered with a layer of oiled silk. This application is to be frequently renewed night and day. The following ointment is rubbed into the lumbar region:

℞.—Salicylic acid . . . . . ʒj.
Lanolin . . . . . ʒj.
Essence of peppermint . . . ♏iv.
Lard . . . . . ʒjss.—M.

As soon as the patient can bear it, a hip-bath of warm starch-water is given twice a day, and also a vaginal injection of a 3 per cent. solution of boric acid. Subsequently antiseptic vaginal suppositories are used to complete the cure.

Spleen-feeding in the Treatment of Lymphadenoma.—BLOMFIELD (*British Medical Journal*, No. 1712, p. 889) has reported the case of a boy, twelve years old, with lymphadenoma, in which during the last month of life a spleen, grilled slightly, over which fresh marrow was melted in lieu of butter, was daily administered with the food. The general feelings were much improved, the chief difficulty being to find a comfortable position, in consequence of the great size of the spleen and the lateral displacement of the head from the mass of glands in the neck. The spleens were generally those of sheep, and were obtained as freshly as possible. It is not suggested that life was prolonged in consequence of the treatment, but it is believed that the general condition was ameliorated and death made easier.

For Psoriasis.—JAMES (*British Medical Journal*, No. 1712, p. 889) recommends the employment of a solution of chrysarobin in chloroform (1 to 7), to which a suitable amount of oleum deelinæ (an equal amount or less) is added, the whole being stirred with a hog's-bristle shaving-brush. With this mixture the diseased area is well scrubbed.

For Undue Sweating.—OLSZEWSKI (*Centrabl. f. d. ges. Ther.*, ix; *Corr.-bl. f. Schw. Aerzte*, No. 20) recommends fluid extract of hydrastis canadensis. In mild cases a single dose of from 20 to 30 drops at night suffices; in more aggravated, from 25 to 30 drops, three times a day, for several successive days will be required.

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FOOT-BALL.

To one who is not bereft of reason and moderation by the "rush-line" of a popular craze or fad, it is simply astonishing to witness the excesses permitted—nay, encouraged—in the name of athletics and education, by the foot-ball enthusiasts.

Note, first, the clear trend of the whole affair toward professionalism, including betting and gambling. It is simply absurd to longer shut one's eyes to this fact. Pseudo-educators and wild enthusiasts may deny or seek to ignore it, but it is fast becoming an open secret that men are making a livelihood by the game, that sometimes their expenses in college are paid for the purpose of winning match-games and that betting on the results of the matches is growing more and more common. Now, a frank, out-and-out professionalism in athletics is not so bad a thing, if the game be truly an athletic and hygienic one, and not brutalizing to mind or body. But one who to any small extent is aware of the way collegiate politics are becoming bound up with semi-professional foot-ball politics must deplore the malevolent influence of the game upon modern educational tendencies.

And, in the name of education—what a farce! Can any sane man deny that in founding, endowing, and encouraging institutions of learning, the object is to fit men for the intellectual battles of life? Can he deny that the training and development of the muscular system, desirable as it is or may be—and there is only one thing that is more desirable—should be subordinated, as a feeder and supporter to mental athletics? Finally, can it for a moment be denied that the student who is a foot-ball enthusiast, whether player or "howler," is nowadays giving a disproportionate amount of his time and interest to the game rather than to his studies? Does the collegiate foot-ballist desire rather to stand at the head of his class, school, or country, as the best-educated man, or to win the applause of 20,000 spectators, and to have his hideous picture and his biography spread before the readers of every daily paper as one of the winning team in a match-game?

What do professors and educators mean who encourage such a tendency? It is either an undignified renunciation of their proper office and function in favor of the professor of athletics and physical training (would it were even so good a thing as that!), or it is a concession to a low type of collegiate politics, and to an irrational fashionable fad.

Do they not suspect that they are raising a ghost that they cannot "lay" again? Wise educators are to-day frightened at the influence of the foot-ball problem, and are seeking earnestly to check the fatal tendency to rowdyishness and coarseness following necessarily and closely upon such practices and abuses of the game-instinct.

We are well aware of the favorable statistics the enthusiasts offer as to the influence of athletics on education. There are two fallacies in them: 1. Foot-ball is not athletics, and the influence of this game will soon reduce the good average as shown by and due to athletics proper. 2. The statistics are gathered and offered by the enthusiasts of the game.

In the name of universal and of university gymnastics—what a farce! Instead of carefully training each and every student physiologically and systematically, so that his bodily defects shall be corrected, and so that his body shall be a supple, strong, and beautiful servant of the mind, there is a concentration of all training upon one man out of a hundred, for a special and not by any means beautiful purpose. Ninety-nine let one do their exercising (excepting the vocal part!) for them, and we have the noteworthy result—vicarious athletics, or gymnastics by proxy. Athletics by proxy can only be compared to religion by proxy—the plan of some religious sects that hire a few professionals to do

their worship for them—they, the passive audience, watching the performance. The aim of educators, so far as it relates to athletics, should be to give every student a rounded harmonious physical organization, not to train a dozen or two dozen semi-professionals (sometimes wholly professional except in name), hired, bribed, or wheedled to attend the institution, to be a show-team, and win matches in order to attract students to the institution. The college that has not a splendid gymnasium, large enough for every one of its students and a compulsory system of physical training for each has little just claim upon parents or the public. The wise father, other things being equal, will send his son to the college that has the best general gymnasium and the poorest record in winning public athletic games.

In the name of esthetics—what a farce! What a remarkable spectacle is that of a quilted, bepadded, dishevelled, long-haired, begrimed, scarred foot-ball hero who finds glory in a savage's scrimmage in the mud! A sane and healthy enthusiasm and love for athletic excellence must have some artistic touch to it. How would the hero of the games of classic Greece at the height of that nation's splendid athletic development compare with our bruised and dirty hero of the foot-ball field?

In the name of hygiene, physical and mental—what a farce! Last week near New York, a young man's neck was broken on the foot-ball field. The enthusiast sneers when the game is called brutal, but in sober earnest is prize fighting less brutal? Doubtless foot-ball has killed more persons than fisticuffs. The papers teem with accounts of the physical injuries of the players after every game. These young men are getting to be proud of their injuries, their sprains, their battered faces, and wrenched limbs. Is this not topsy-turvy? Is this gymnastics? If so, it is inverted gymnastics—on its head in the mud! We laugh at the outrageously perverted pride of the German student who exhibits his chopped and mangled face as a proof of glory instead of shame—and we are going the same road. Wise fathers are beginning to refuse their sons permission to play a game that relies for its charm upon a distinct reversion to a barbaric type of sport, in which savagery, danger, and the lowest kind of physical prowess are the alluring elements.

In the name of example to the young—what a farce! A game must be translated into the vernacular of the street-urchin to illustrate clearly its possibility for evil. The beautiful games of cricket and base-ball have, on the whole, been a blessing to the country; they are not brutal; they have large elements of skill and intellectuality in them; they encourage suppleness and all-round development of the body, of the senses, and of the mind. A "scrub-game" by suburban boys, or even by street gamins, does not make the players worse than they naturally are, does not arouse all the fierce and brutal passions of the savage nature, none too easily held in control even by the best. But compare this with a foot-ball game by the same half-civilized or quarter-civilized little savages, and one sees quickly the influence for evil of apparently so simple and small a thing as a game. If, governed by rigid rules and umpires, the presence of a vast refined audience and the possession by the players of good home-training, education, and all that, the game results in charges and the facts of "slugging," and in passionate enmities and rivalries, what then is to be expected from its translation into the conditions of the alley, the vacant-lot of the city-outskirts, and "played" by the most unregenerate types of human nature? Imitation is flattery—usually—but in this instance the flattery is nauseating even to the flattered.

It is a cause of deep regret that we should approach the ideal of Rome in our national sports, rather than that of Greece, and it is especially significant when educators and universities show this tendency. One would not expect them to encourage gladiatorial rather than intellectual and truly athletic contests.

Have we not more patriotism and originality than to accept this worn-out brutal old game second-hand from England? Have we not enough intellect to put some true "play," some ingenuity, and spontaneity into our national sport? Have we not enough mind to introduce something into play except "a secret code of signs," "undergraduate rules," and a coarse scrimmage of a dozen bleeding, bunched, and scuffling fellows sprawling in the mud?

If not in the name of general education, then in the name of medical education; if not in the name of morality, then in the name of medicine; if not in the name of esthetics, then in the name of physiology; if not in the name of social progress, then in the name of hygienic progress—it is time that we should command, Halt! The game is un-American and absolutely opposed to the spirit of true education, whether of the mind or of the body.

MUSCULAR DEVELOPMENT AND USE THE CONDITIONS OF HEALTH.

It was, we believe, a saying of Pascal that the evils that afflict mankind arise from our inability to sit still in a room—meaning thereby that in useless and ill-considered action is to be found the origin of much tribulation, and that calmly thinking out the best methods of action in advance would obviate it. But the modern physician and hygienist must often feel like reversing Pascal's *mot*, and saying that the evils that afflict mankind—or more truly, womankind (the same thing, however!)—come mainly from sitting still in a room. We mean by this that the great and the increasing prevalence of sedentary and indoor occupations inflicted on human bodies is already ripening a wretched source of physical (and hence psychic and moral) suffering. If there is any truth at all in evolution it is that animal and human life and progress have always been conditioned upon the exercise of the muscular system, that function precedes and begets structure, and that disuse leads to atrophy and death.

The disuse of the muscular system that is a result of civilization is the prolific source of much of the disease of modern life and an illustration of the biologic law. All the discoveries of modern medicine and science, every bacteriologic truth, every known etiology of disease, simply confirms the truth that, together with cleanliness, muscular health and development are the necessary conditions of freedom from disease, and that there is no health of the muscles without use of the muscles. The bacillus of tuberculosis has no power of harm to a person with proper thoracic and pulmonary expansion and development. All "consumption cures" except this one are useless, and this with some exceptions is effective in prophylaxis or cure. There is hardly a disease that does not equally well illustrate this truth.

What is civilization doing with this law? It is crowding people into huge cities, where every means of artifical locomotion, every labor-saving apparatus, and every necessity of business are all working to the same end of inactive muscles. From the weak, half-atrophied muscles naturally follow the defective digestion and assimilation of food, and the overwrought hyperesthetic morbid nervous system, ever vainly seeking to undo and to right the evils of denutrition, hyper-nutrition, and muscular inactivity. Our food is pre-masticated and we are becoming edentulous, and from the advertisements of predigested foods it would appear that we shall soon have no need of a private stomach, liver, or pancreas, because we can and should buy these products from the slaughter-house and laboratory, and thus save personal wear and tear. It is in the line of the much expounded physiologic division of labor. But that line logically and inevitably ends in the condition of some slave-holding ants that cannot move, and unless fed by their slaves die of starvation even when food is before them. Of course, we already have analogues of these little organisms in the increasing horde of urban hysterics, neurasthenics, roués, and tramps of various sorts, both aristocratic and ragged.

And lastly, comes the sham-science that would supply the want of healthy vital powers of all kinds, cerebral, muscular, testicular, and what-not, burned out by abuse or atrophied by disuse, by means of squirting into the veins or under the skin some of the supposed vital, but really dead and inert, juices of animals.

And even our frantic attempts to remedy the evil of muscular inactivity, with its spawn of varied disease, are themselves morbid, and sometimes serve to increase the evil. This fact becomes plain in our rage for athletics by proxy, and in the steady trend of athletic games toward professionalism and newspaper notoriety, sensationalism, to the encouragement of betting, and to the more brutal sorts of arena combats.

So far as cities are concerned, one of the most crying of evils is over-pressure of school-children. Every physician has daily before his eyes the sad results, and he knows that instead of medicine the poor little body needs play and exercise, and out-of-door air and sunshine. All of the book-cramming that can be jammed into them will never compensate for the pallor, the pipe-stem legs, the narrow chests, and the stunted or abnormal growth.

The city child needs what it cannot have, country life. Failing in this it should be supplied with abundant, healthful gymnasium exercise, under the careful eye of expert and discriminating teachers of hygiene and physiologic development.

All of this is doubly true as regards girls and women. Fashion and house-incarceration and wealth are reducing our women to sad specimens of bodily and muscular ill-health, flabbiness, and undevelopment. Either publicly, or in private to parents, every physician can point out the truth,

and by his advice may help to avert the crop of coming disease or, in some degree, to cure the pathetic instances that fall under his care.

TOLERANCE TO SUPPRESSION OF VITAL FUNCTIONS AND RETENTION OF NOXIOUS EXCRETIONS.

NOT less remarkable than the idiosyncratic susceptibility of some persons to external influences is the tolerance of other persons to influences of the same class. We view with curiosity the individual who is excited by ordinary medicinal doses of opium or morphin, the other who is rendered vertiginous by the taking of a hundredth of a grain or less of nitroglycerin, the third who develops symptoms of coryza after the ingestion of almost inert amounts of potassium iodid, and so on; but not less curious are the instances in which massive doses of opium or morphin are well borne, as much as five grains of nitroglycerin are taken at a dose with advantage, and an ounce of potassium iodid is ingested daily without discomfort. Not less remarkable than these instances of tolerance to drugs are those cases in which life may be continued for long period after the suppression of certain functions or the retention of the products of these functions, the performance and the elimination of which, respectively, are thought essential to the continuance of life. For instance, constipation for a week is common, while constipation for a month at a time is far from unknown. Again, in some cases of jaundice, due to obstructive disease of the gall-ducts, bile does not enter the intestine for months, and even years.

Recently (THE MEDICAL NEWS, August 12, 1893, p. 176), we recorded a case of gout and renal colic in which there was total suppression of urine for eleven days. CABOT (*Boston Medical and Surgical Journal*, vol. cxxix, No. 9, p. 213) reports a similar case, in which the suppression continued for almost eight days. The case was that of a man, aged sixty, who, during a period of seven years, had had a number of attacks of renal colic upon one or the other side, and who, on several occasions, had passed renal calculi. In the attack in question, after the continuance of intermittent pain in either loin for about a month, there was a cessation of the flow of urine, and for nearly eight days none was passed, only a dram of turbid fluid being obtained by catheterization on the third day. During most of the time there were no special symptoms. On palpation a little more resistance was appreciated in the right loin than in the left, and there was slight tenderness. The prostate was of moderate size, but no tenderness or hardness could be detected above it. As the evidence indicated that the function of the kidneys had been interfered with by some mechanical obstruction, probably a stone, a median incision was made into the abdomen, between the umbilicus and the pubes. The right kidney was found to be irregular and lobulated, and enlarged to perhaps three times the normal size. Careful palpation of the ureter was difficult on account of the abundance of retroperitoneal fat, but nothing suggestive of a stone could be detected in the pelvis or ureter. The left kidney was of normal size, and its pelvis was not distended with fluid. Its ureter was traced with great care from kidney to bladder, but no stone could be detected. The bladder was contracted in the pelvis. To facilitate careful palpation of the left kidney an additional incision was made in the loin, but no stone was found. Further interference was now abandoned, the median wound being closed, the lumbar wound drained and only partly closed. The patient reacted well, and three hours after the operation there was a slight escape of urine from the urethra, and on passing a catheter thirty-seven ounces of light-colored urine were evacuated. The discharge continued, so that, partly by natural efforts and partly by catheter, two gallons of urine were obtained in the first twenty-four hours. In the second twenty-four hours five quarts were passed, the amount gradually diminishing until a daily excretion of seventy ounces was reached. Convalescence was satisfactory, and about a fortnight after the operation the bladder was washed out with a litholapaxy-pump, a few grains of calcareous matter being brought away. Some time later another attack of colic occurred, from which relief was afforded by massage in the course of the left ureter, and a calculus was passed a week afterward. It is believed that the function of the left kidney was suppressed by an inhibitory influence due to the irritation of a calculus in the left ureter, and not wholly as a result of the presence of the obstruction, while the function of the right kidney was entirely lost.

From the experience gained in this case, and from a study of the literature, the conclusion is reached (1) that in a calculous patient, or in a patient with a distinct attack of renal colic, suppression of urine should be regarded as directly due to

the obstruction. In the majority of cases both kidneys will be found to be disabled. (2) Such a case should be treated by operation as soon as it is evident that the function of the kidneys has come to a standstill, as there is little chance of the stone being pushed along the ureter when the kidney is no longer secreting urine behind it. (3) In the absence of evidence as to the location of the stone, the first step in such an operation should be median celiotomy, with the hope of discovering the whereabouts of the calculus, in order to proceed intelligently for its removal. (4) If by this examination no calculus can be found, steady massage of the pelves of the kidneys and of the ureters, from above downward, should be practised, in the hope of dislodging or breaking up a small calculus if present.

EDITORIAL COMMENTS.

The Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the fiscal year 1892, issued by the Treasury Department, emanates from the chief officer of a very important but too little known branch of the public service. Perhaps very few persons, even among those generally well-informed, are aware of this great system of medical relief for sick or injured seamen, which had its origin nearly one hundred years ago.

In 1798 Congress imposed a monthly tax of twenty cents upon every seaman's wages, to go toward a relief fund for those in need of medical or surgical treatment. These collections, in 1802, were constituted a general fund, and provision was made for like care for foreign sailors at the rate of seventy-five cents per day. In 1811 the moneys raised from the navy were made a separate fund for the benefit of that branch of the service. A reorganization took place in 1870, and the business was placed in charge of a supervising surgeon-general; the hospital-tax on each seaman's wages was also increased to forty cents per month. Besides the revenue derived from this tax, appropriations have from time to time been made by Congress for the maintenance of the work.

Without going into detail, it may be stated that the care of the seamen is provided for by contract with general hospitals or with private parties, except where the Government has established its own hospitals through this bureau. Of these latter there appear to be at present nineteen.

Besides this prime object of its existence, aid is extended by this department to other branches of the Government service: to the life-saving service on the seacoast and on the great lakes; to the inspection service of steamboats, and to the revenue-marine service, as well as in examination of immigrants. Another very important matter, as to which interesting details are given in the report, is that of national quarantine. This subject occupies forty-nine pages, and is well illustrated.

Some idea of the magnitude of the work of the department may be obtained from the fact that at the commencement of the fiscal year there was a balance available of $75,528.01, and that the receipts from all sources were $650,510.39; the expenditures were $586,-839.06; leaving a balance at the close of the year of $139,199.34.

One hundred and nineteen pages of the report are filled with histories of fatal cases, with necropsies; many of them are of little or no scientific value, and all are simply buried. Following these there are sixty pages of tabulated statistics, of which the same may be said. We think it would have been better had the medical officers given their observations to the profession through the usual channels, and the Government issued a merely business document setting forth the workings of the office.

The Aims and Incompetencies of Opticians.—Every optician in the United States (except perhaps as many as can be counted by the fingers of one hand) is cocksure of his ability to prescribe for ametropia as well as any physician. Not only this, but the opticians (with but few exceptions) attempt to do so whenever opportunity presents. Further, their single trade-journal is encouraging this delusion, and enthusiastically urges the establishment of optic schools wherein the non-medical optician shall learn to relieve the medical profession of all care of the eyes, except as to diseases and surgery. As the treatment of ametropia and heterophoria constitutes about nine-tenths of the oculist's work, this has bearings worthy of consideration. As absolutely every pair of spectacles worn has a medical, and possibly a most *serious* medical significance to the wearer, and as (with few exceptions) no non-medical optician ever prescribed a proper pair of lenses (the writer has in thousands never seen a single instance), the fact becomes quite significant. It is exactly as if the truss-makers and instrument-makers should combine to take out of the hands of the surgeons all cases of hernia and spinal disease, and should urge that to them should be left the decision as to whether a case of rupture or of Pott's disease needed a surgeon or not. Just as every case of spinal curvature needs the surgeon's attention, so does every case of ametropia or heterophoria, and it is downright and criminal quackery to permit the present method. If the opticians only knew how to do their own proper work their pretensions would be less exasperating, but (with few exceptions) one cannot find, from any American optician, a spectacle bridge and frame sufficiently rigid and heavy to do its medical work; never a temple-piece or ear-curve having the remotest likeness to the shape of the back of the human ear; never an adjustment such as corresponds to the wearer's peculiarity of face and labor. Of the spectacles worn by the American people (and Heaven knows our opticians are better than those of foreigners) $\frac{999}{1000}$ show about the same mechanical and artistic skill and intelligence that is shown by a five-year old school-boy's first slate-picture of "a horse."

Society Transactions and Libraries.—Having occasion recently to look up a certain subject on which we hoped to obtain information from the Transactions of one of the medical societies of America, we were surprised to learn

not only that the volume desired was not in the great collection of the Library of the College of Physicians of Philadelphia, but that with a few exceptions it was only with the utmost difficulty that the librarian could obtain copies of the Transactions of American societies in general. The one place where society Transactions should be is in a great public library. That is where men go to consult such books, for few have space upon the shelves of their private libraries for the enormous number of volumes required for a complete collection of society proceedings, and incomplete collections are of little value. Every society should instruct its secretary or its editor to send the annual volumes to all the medical libraries, and even to some selected general libraries —such as those of the historical societies of the respective States and counties.

We trust that if this comment comes to the eyes of the officials of any society that has hitherto neglected to send its publications to the libraries, they will immediately take steps to remedy that neglect. The Library of the College of Physicians of Philadelphia (which is a scientific society and not a diploma-granting body) is the greatest in America, with the exception of that of the Surgeon-General of the United States Army at Washington. The address of the College is Thirteenth and Locust Streets, Philadelphia. We hope that our cotemporaries will speak of the matter, so as to attract the attention of all societies all over the land.

Non-Experts can Testify as to Value of Services in Caring for the Sick.—In many instances, before a witness can give an opinion, he must be shown to have some special aptitude, skill, or knowledge of the subject; but there are some things coming ordinarily within the observation of all men, as to which any man will be entitled to give his opinion. Thus, opinions as to time, speed of ordinary moving objects, and distances, are received without any proof of special knowledge or skill on the part of witnesses. And it is not necessary, says the Appellate Court of Indiana in the case of Storms *vs.* Lemon (24 N. E. Rep. 644), that one should be an expert, and have special experience, to enable him to be competent as a witness to testify to the value of services rendered in taking care of the sick by a person not a trained nurse. Every man who has arrived at years of maturity must, in the course of Nature, have had more or less experience in caring for the sick, or seeing it done; and when one has seen such services, as they are being rendered, he is competent to give the facts, and then his opinion as to the value of such services, the weight to be given to the opinion being determined by the jury. Besides it would be hard to conceive of a case in which one who has himself rendered a service to another will not himself be competent to give evidence as to its value. Knowing the precise nature of the service rendered, he must have some knowledge of its value, and he is thus competent to give his opinion. It may not be worth much. Its weight, however, is for the jury to decide.

The Curative Influence of Erysipelas.—Though we are yet without the explanation, it is a well-recognized clinical fact that the development of erysipelas in the course of certain other morbid conditions, such as pulmonary tuberculosis and malignant neoplasms, is sometimes followed by the disappearance of the previously existing disease. Future investigation may show that as a result of the presence and activity of the streptococcus erysipelatis certain bodies or substances are generated that exert an antidotal or antagonistic influence upon associated disease-conditions or their products. The uncertainty of the result, both favorable and unfavorable, from the artificial induction or inoculation of erysipelas renders doubtful the justifiability of the universal application of this principle for therapeutic purposes. Our clinical knowledge upon this interesting subject has been increased by the recent report of a case (SCHMIDT, *Centralblatt für Gynäkologie*, 1893, No. 39, p. 900) in which, during the progress of an aggravated attack of gonorrhea, the development of erysipelas was so immediately followed by a permanent disappearance of the urethral symptoms, that the relation could not be looked upon as other than direct and not merely accidental.

SPECIAL MEMORANDUM.

AN ADDITIONAL WORD AS TO THE TREATMENT OF EXOPHORIA.

BY GEORGE M. GOULD, A.M., M.D.,
OF PHILADELPHIA.

I HAVE received such a large number of letters of inquiry as regards the little suggestion *in rê* the treatment of exophoria made in THE MEDICAL NEWS of October 14th, that it has become almost impossible to answer each inquiry individually. I should like to add a word or two in order to classify and explain several points that seem to have been left in some doubt:

1. The treatment of insufficiencies by means of weak prisms "to strengthen the muscles," seems to have been devised and recommended by Dr. Dyer so far back as 1865, and in this field of work that veteran clinician and honored teacher, Dr. Noyes, of New York (and possibly many others), has long carried out this plan, and other excellent modifications of the plan, in his practice. When I wrote my article, as explained at the time, I had had no opportunity to look up the literature of the subject, and did not know of the work of Drs. Dyer and Noyes, nor was I aware of the excellent studies and methods suggested by my friend Dr. Savage, of Nashville, Tenn. To these and any other workers in "prism-gymnastics" I would gladly acknowledge all precedence and give all honor so far as pertains to muscular gymnastic exercises of the eye. This in answer to two correspondents who thought I had not sufficiently done so. But that even these methods of treatment have proved unsatisfactory is evident from the fact that they have not become routine with the general profession, and that in several of the best and most recent books on ophthalmology the method is not even mentioned. (I was, however, in error when I said that the fine treatise of my friend Dr. de Schweinitz had also omitted mention of it, my error being due only to its omission from the index.)

So much for my sins of omission!

2. But it remains to emphasize my contention that I do not aim to "strengthen the muscles," and that with "muscular gymnastics," as such, my plan has nothing in common except the mere use of prisms—very strong

prisms, however, instead of weak ones. If the trouble lay in the peripheral mechanism, then tenotomy or gymnastic exercises with weak prisms would be the proper treatment, and the use of such strong prisms as I advise would be the height of dangerous folly. It seems to me that all previous treatments of heterophoria have looked solely to the muscles, the peripheral condition, as the *fons et origo mali*. Surely all tenotomization proceeds on that assumption, and I as certainly judge that all previous suggestions of "prism-gymnastics" likewise are founded upon the same conception.

3. But it appears to me beyond question that in the vast majority of cases of exophoria, if not in all, the seat of the abnormality is purely, at least primarily, and always principally, central, and innervational. It is not at all a question of tendon-insertions or of muscular strengths. A few of many reasons for so thinking are these:

a. In convergence-adduction, the "muscles" overcoming the maximum of prisms, bases out, that is possible, either internal rectus may be made to greatly increase its contractile power by simply carrying the object to the left or to the right side of the field.

b. Extreme adduction (twenty feet) of exophoric eyes may be doubled, often trebled, in a minute or two by the device of carrying slowly the object gazed at, with weighted convergence-stimulus from the near to the distant point. If, as I said, one can lift with his arms only 200 pounds, one cannot lift 400 or 600 pounds in a minute by any analogous change of the method of lifting.

c. The extreme of primary adduction-power, and even the double of this extreme, may be held continuously for several minutes, even a half-hour or more—I don't know how much longer. The extreme lift of other bodily muscles can only be held an instant, and not only this, but constant and uninterrupted tension or contraction of such muscles in lifting even very small weights is impossible.

d. Besides all this, such constant tension, when solely muscular, is painful, even agonizing, if demanded by the will or by necessity. In the case of exophoria, the extreme of prisms, and even the double of the extreme, bases out, that can at first be held without diplopia, is in a minute or two continuously held without the faintest suggestion of pain or even of discomfort.

e. Muscular tissue, as such, cannot be made to double or treble its volume or its strength in a few hours or days, or even in a few weeks, but such increase of ocular adduction-power I see many times every day.

There are many other such considerations, too numerous to mention, all running to prove the same conclusions.

4. If, therefore, the seat of the difficulty lies in the innervational centers and coördinations, the treatment by tenotomy, or by gymnastic exercises (with weak prisms), seems to fall to the ground. We must instead seek to normalize innervation, leaving the muscles and tendons entirely out of the count. In accordance with this I have sought to break up the bad habit of exophorial innervation, to reëstablish normality in an erroneous nervous coördination, to heighten convergence-stimulus, and to carry this increased stimulus as well as the naturally heightened stimulus of convergence at near range, into distant and all-around seeing.

5. The method I suggest for effecting this normalization of innervation and coördination in exophoria is by what I have called "the weighted convergence-stimulus carried from the near-point to the distant-point." In the great majority of cases of subnormal adducting power, I find that the "weighting" or "handicapping" by prisms, bases out, is at first about double the primary twenty-foot adduction-power. That is, if the patient has only 10° of such adduction-power, we may at first safely give 20° prisms (total) as the handicap, then slowly carry the object gazed at fixedly and continuously from the near-point to the distant-point. This is to be repeated until the eyes with 20° prisms can hold objects all about the room easily. The repetition is to continue several times daily until this increased adduction-power *is habitual*, and until no diplopia is produced on first adjusting the prism-fronts, (or, better, prism-spectacles) and looking at distant objects immediately, and without the device of carrying the object from the near-point to the distant-point. When this condition has been reached, the strength of the "handicap-prisms" is to be increased say, to 25° or to 30°, and the method resumed as before. Before an adduction-power of 30° has been reached the symptoms of asthenopia will long have vanished, but the manifest, or the latent exophoria, will still usually, and to some degree, be present. The treatment with 30° to 40° prisms should be continued until all manifest and latent exophoria has disappeared, and 2° of esophoria have become manifest.

These, of course, are rough and indefinite rules, drawn from my short experience with the method, and they will require adaptation to the peculiarities of each case. Some patients have far greater reaction-power than others, both as to the amount of the "weighting" of the convergence-stimulus permissible or required, and as to the rapidity of the return of normalization of innervation. But in all cases, so soon as increase of adduction-power has become stronger and habitual, we should weight the convergence-stimulus with still stronger prisms, so that effort and the device of slow recession of the object gazed at are (at first) required to avoid diplopia on looking at distant objects.

Since writing my first hurried article, my experience with the method has doubled. In no case has there been anything but the most gratifying success.

Many inquiries about the "battery of prisms" for testing adduction and abduction have been sent me. I have now given an optical firm a plan of a "double battery" that will, I am sure, be far superior to the old model. So soon as the instrument is completed I shall publish the design.

REVIEWS.

A Manual of Medical Treatment or Clinical Therapeutics. By I. Burney Yeo, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London, etc. With illustrations. Two volumes. 12mo, pp. xv, 631, 774. Philadelphia: Lea Bros. & Co., 1893.

At the present day, when the subject of medicine is so large and the lines of division of its various departments so ill-defined, it is a matter of exceeding difficulty in

writing a practical work to determine what should be included and what excluded.

In a work on "clinical therapeutics" it is a matter of delicate judgment to decide in how far special subjects, not strictly medical, such as dermatologic, laryngologic, neurologic, surgical, and the rest, should receive consideration.

We must, however, confess to a sense of disappointment with this work of Dr. Yeo, for we have learned to repose a good deal of confidence in his writings. Our complaint is not of what is contained in these two volumes, but of what has, intentionally or otherwise, been omitted. We might, perhaps, condone the omission of any consideration of such conditions as akromegaly, syringomyelia, lateral, postero-lateral, and cerebro-spinal sclerosis, progressive muscular atrophy, general paralysis of the insane, paralysis agitans, leprosy, foot-and-mouth disease, glanders, anthrax, actinomycosis, because of their relative incurability; but the same excuse scarcely applies to the absence of any reference to such subjects as syphilis, erysipelas, insolation, yellow fever, epidemic cerebro-spinal fever, relapsing fever, trichiniasis, hydrophobia, purpura, scurvy, rhachitis, alcoholism, and not a few other conditions.

The various subjects are taken up under nine main heads: the organs of digestion; the heart and bloodvessels and the blood and ductless glands; the organs of respiration; pulmonary tuberculosis; the liver; urinary and renal affections; the nervous system; constitutional diseases; specific infective diseases.

The recommendations made include not only strictly medicinal measures, but surgical procedures as well, and a number of good illustrations aid in the elucidation of the text. The subject-matter of these volumes is, on the whole, excellent and reliable, a conservative tendency predominating. The article on pulmonary tuberculosis is conspicuously full and valuable. We are a little dubious, however, as to the wisdom of publishing the "formulæ of well-known physicians," without a willingness to accept the responsibility of recommending them. We have also to regret that Dr. Yeo found it impossible to enter fully into a discussion of the value of cold baths in the treatment of enteric fever, for an abundant clinical experience has demonstrated that in this measure we have the most powerful means at our command for reducing the mortality in this disease. Neither does it seem justifiable to say of a method of treatment, that of tetanus with the tetanotoxin, which has now been employed in some sixteen cases with success, that "it can hardly be said that any very conclusive results have as yet been established."

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics, and Hygiene, in Jefferson Medical College, etc. Eighth edition, revised and enlarged. 8vo, pp. 820. New York: D. Appleton & Co., 1893.

OF all the works on materia medica and therapeutics in the market, Bartholow's most nearly meets the needs of the physician in his daily practice. Hence its great popularity, from the first edition, and hence too the confidence with which we predict an extensive sale for the new edition. In conformity with the new (1890) Pharmacopeia, many new remedies have been introduced, and the metric system of weights and measures has been measurably adopted. Tables of comparison of the old and new systems are given for reference. Of the new remedies excluded from the Pharmacopeia because of their being called by trade-marked names or made by patented process, a number have been discussed—those, namely, that are in the author's opinion of sufficient importance. No secret remedy or nostrum has, however, been discussed. The author's position is the correct one, for, as he points out, his treatise is not an official work like the Pharmacopeia, and he may justly give such information as is needed in the cases of drugs to which the Pharmacopeia could not properly give official recognition.

The book is characterized by the clearness and accuracy of statement, and the fulness with conciseness of treatment, avoiding both prolixity on the one hand and incompleteness on the other, which have made all of Dr. Bartholow's works so valuable to the profession. All that is of importance in regard to the pharmaceutic relations, physiologic action, or clinical utility of the agents discussed is told; and a sufficiency of space is devoted to remedial agents and agencies other than drugs. We conclude, as we began, by affirming our belief that while excelled by such a book as Brunton's for special investigations, yet for the daily use of the physician, Bartholow's *Materia Medica* and *Therapeutics* has no rival.

A HANDBOOK OF OPHTHALMIC SCIENCE AND PRACTICE. By HENRY E. JULER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital, London. New (second) edition, revised and enlarged. In one handsome octavo volume of 562 pages, with 201 engravings, 17 colored plates, test-types, and color-blindness tests. Philadelphia: Lea Bros. & Co., 1893.

THIS second edition of Juler's *Handbook* is a great improvement upon the first. It has been found necessary to add about a hundred pages to the text and nearly as many new illustrations, the latter, especially the beautiful photomicrographs, being very excellent, attractive, and praiseworthy. Thus revised, enlarged, and outfitted, this good book is one of the most profusely illustrated works offered, and generally speaking, the best book on the subject that our English confrères have sent us. It has over Berry's more scholarly work the great advantage of simplicity and practicality in the presentation of the subject. There is a clearness and compactness that is rarely attained by English writers and that reminds one of the best French workmanship. The strength of the work lies in its excellent exposition of the clinical aspects of diseases of the eye, and in this department it is usually a safe and reliable guide to the student and general physician. We object, however, to the customary rash haste with which slitting the canaliculus and probing are advised in cases of functional stenoses of the lacrymal drainage-system of the eye.

The parts pertaining to the treatment of ametropia and insufficiency are often in conflict with American practice.

Most American oculists can only smile dissent when advised that mydriatics are unnecessary in the estimation of (seeming) myopia, in patients over thirty years of age, and that adults with three dioptries of hyperopia need to wear correcing glasses only for near work.

Appendices containing formulæ and Snellen's reading types, and a better index than is usual, are commendable features.

It is, of course, an excellent piece of printing and bookmaking.

A Synopsis of Clinical Surgery during the Service of Samuel H. Pinkerton, M.D., Surgeon to the Holy Cross Hospital. By Franklin A. Meacham, A.B., M.D., Assistant Surgeon to the Holy Cross Hospital, Salt Lake City, Utah. Illustrated. 12mo, pp. 145. Salt Lake City Tribune Job Printing Company, 1893.

This little brochure is a compilation of 632 miscellaneous operations performed for the most part during the past year, some of which are of considerable surgical interest. The total number of deaths is seventeen, or 2.6 per cent., eleven of which, it is stated, were *in extremis* at the time of operation.

The celiotomies are interesting on account of the high mortality, which was 24.3 per cent., six of the cases being *in extremis* at the time of operation. These include ligation (fatal) of the common iliac artery by the new intra-peritoneal method of Treves, and successful operations for a large cyst of the pancreas, an echinococcus-cyst of the gall-bladder, nephrorrhaphy, and nephrolithotomy. The most fatal cases seem to have been those strictly belonging to gynecology, in which success has been so uniformly achieved by the operators of Philadelphia in particular.

The operations for tuberculous disease merit criticism, as amputation for ankle-joint disease and amputation for ankylosis are seldom performed. Modern ideas upon articular disease have been revolutionized by antiseptic methods, iodoform-injections, and the American method of extension in the treatment of joint-disease. Of twelve operations for tuberculous joint-disease six were amputations, three through the lower third of the thigh, one at the hip, two at the lower third of the leg. When we consider that excision was introduced by MacCormick as a substitute for amputation, and that modern surgeons reserve amputation as a life-saving measure, the importance and force of these criticisms will be appreciated. In justice, however, it must be stated that all of the patients ultimately recovered from the excisions and amputations.

An Account of Bellevue Hospital. With a Catalogue of the Medical and Surgical Staff from 1736 to 1894. Edited by Robert J. Carlisle, M.D. Published by the Society of the Alumni of Bellevue Hospital. 8vo, pp. 381. New York, 1893.

We find in this handsome and attractive volume a very well written and interesting sketch of the development of a vast and thoroughly-equipped hospital, having in connection with it a medical school of high repute. And besides its purely historic interest, the work contains much material of value to all who are concerned in the management of like institutions.

On the first page it is claimed that Bellevue is the oldest hospital in this country. But this claim does not seem to us to be substantiated. There was a poorhouse in New Amsterdam, and a hospital was established in 1658. Of the latter it is merely said: "This institution still remained in 1680, for in that year what was known as the 'Old Hospital' or 'Five Houses' was sold, and a better building provided." But the poorhouse, which was not only a home for paupers, but also a Bridewell or house of correction, existed as such until 1811; "when," says the editor, "the third almshouse was about to be built, and the hospital thenceforward gradually to become the most important part of the establishment." This seems to have been the true beginning of Bellevue Hospital.

Upon the later pages of this history are to be found many names of men eminent in medicine and in surgery. Nor are there wanting accounts of those—of whom our profession may be as justly proud—who gave up their lives in the discharge of their duty to the sick.

Three Introductory Lectures on the Science of Thought. By F. Max Mueller. With an Appendix of Correspondence. Chicago: Open Court Publishing Co., 1893.

These lectures were delivered in 1887. In his strenuous contention that thought and language are identical, Professor Mueller makes the common mistake of analyzing his own thought-processes, and reasoning from them back to the beginning. If he would study children he would soon see that thought precedes language, and is carried on without the aid of words or signs. Naturally such thought is limited. After one learns to speak he finds his thought increased in definiteness and his thinking rendered easier by the use of words; yet even in the most advanced brain some thinking goes on automatically without words, suddenly forcing itself into consciousness in the form of words.

In the letters collected in the appendix, Mr. Galton and Mr. Romanes have given other examples fatal to Professor Mueller's theory. Indeed, Mr. Galton's letters are the best things in the volume.

Notwithstanding his fundamental error, the author's work is interesting and, in many collateral relations, instructive.

NEWS ITEMS.

Virchow celebrated, on October 21st, the fiftieth anniversary of his accession to the doctorate.

Twelfth International Medical Congress.—It is announced that the Russian Government contemplates inviting the Twelfth International Medical Congress to be held in Russia, probably at St. Petersburg.

Sir Andrew Clark, the distinguished English physician, was stricken with apoplexy on October 19th, right hemiplegia and aphasia developing, and death taking place on November 6th, at the age of sixty-seven years. Sir Andrew was the President of the College of Physicians of London, and the foremost medical man in England.

The Medical Society of the University of Maryland has been organized, with the following officers: President,

Dr. J. J. Chisolm: Vice-President, Dr. C. W. Mitchell; Secretary, Dr. W. B. Canfield; Executive Committee, Drs. J. E. Michael, W. B. Platt, and J. M. Hundley. The society will meet on the first Tuesday of each month and will be composed of the faculty, adjunct faculty, members of the teaching and hospital staffs, and graduates of the University.

BOOKS AND PAMPHLETS RECEIVED.

Subjective Alteration of the Pitch of Sounds in the Partially Deaf. By E. B. Gleason, M.D. Reprinted from the International Medical Magazine, 1893.

Extraction of Steel from the Interior of the Eye with the Electro-magnet. By Alvin A. Hubbell, M.D. Reprinted from the Transactions of the New York State Medical Association, 1893.

Congenital Ptosis with Synchronous Movements of the Affected Lid and Lower Jaw. By Alvin A. Hubbell, M.D. Reprinted from the Archives of Ophthalmology, 1893.

A History of Surgery in South Carolina. By Edward Frost Parker, M.D. Reprinted from the North Carolina Medical Journal, 1893.

Two Cases of Sterility and Impotence following the Left Lateral Operation for Stone. By Orville Horwitz, B.S., M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Character, Object, and Scope of the Medical Profession, By J. F. Gruwell, A.M., M.D. Pamphlet. Alliance, Ohio: Scranton & Hoiles, printers, 1893.

Transactions of the American Dermatological Association, at its Sixteenth Annual Meeting, New London, Conn., September, 1892. Official Report of the Proceedings, by George Thomas Jackson, M.D., Secretary. New York, 1893.

Bulletin of the Harvard Medical School Association, No. 4. Boston: Published by the Association, May, 1893.

Prospectus of the College of Pharmacy of the City of New York, 1893–94.

U. S. Department of Agriculture: Farmers' Bulletin, No. 12. Nostrums for Increasing the Yield of Butter. By Harvey W. Wiley, Chemist of the U. S. Department of Agriculture. Washington: Government Printing Office, 1893.

Points of Similarity Between Us and Homeopathic Physicians. By John B. Roberts, A.M., M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

Die Zaraath (Lepra) der Hebräischen Bibel. Von G. N. Munich. Hamburg und Leipzig: Verlag von Leopold Voss, 1893.

Reminiscences of the Founders of the Woman's Hospital Association. By Thomas Addis Emmet, M.D. Reprinted from the New York Journal of Gynecology and Obstetrics, 1893.

Sexual Weakness and Impotence. By Edward Martin, M.D. Physician's Leisure Hour Library. Detroit, Mich.: George S. Davis, 1893.

Typhus Fever. By David Cerna, M.D. Reprinted from the St. Louis Medical Review, 1893.

Colotomy. By Charles B. Kelsey, M.D. Reprinted from the Therapeutic Gazette, 1893.

Akromegaly, with the Clinical Report of a Case. By Archibald Church, M.D., and William Hessert, M.D. Reprinted from the Medical Record, 1893.

Laparotomy and Removal of Cystic Tumor (Cysto-adenoma) of Peritoneum; Formation of an Artificial Anus; Subsequent Laparotomy and Resection of Colon; Closure of Artificial Anus; Recovery. By W. Page McIntosh, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

The Rôle of the Cell. By J. Wellington Byers, M.D. Reprinted from the American Therapist, 1893.

Cholecystotomy. By Edwin Ricketts, M.D. Pamphlet. Cincinnati, 1892.

Hematomyelia and Acute Myelitis. By Joseph Collins, M.D. Reprinted from the Medical Record, 1893.

The Clinical Value of Repeated Careful Correction of Manifest Refractive Error in Plastic Iritis. By Charles A. Oliver, M.D. Reprinted from the Transactions of the American Ophthalmological Society, 1892.

Ottantadue Tracheotomie e Ottantaquattro Intubazioni, come Contributo alla Statistica. Dott. Francesco Egidi di Roma. Firenze: Tipografia Coöperativa, 1893.

Remarks on the Presentation of Diplomas to the Graduating Class of Barnes Medical College. By C. H. Hughes, M.D. Reprinted from the Alienist and Neurologist, 1893.

Deformities of the Nasal Septum and their Influence on Diseases of the Ear and Throat. By William Scheppegrell, A.M., M.D. Reprinted from the New Orleans Medical and Surgical Journal, 1893.

Charaka-Samhita. Translated into English. Published by Avinash Chandra Kaviratna. Calcutta: D. C. Cass & Co.,

Neuritis and Myelitis and the Forms of Paralysis and Pseudo-paralysis following Labor. By Charles K. Mills, M.D. Reprinted from the University Medical Magazine, 1893.

A Concise Disquisition of the English Language, and a Plea for Improving its Orthography. By J. P. Gruwell, M.D. Pamphlet. Alliance, Ohio: R. M. Scranton, 1893.

Treatment of Suppurating Bubo. By Orville Horwitz, B.S., M.D. Reprinted from the Medical Record, 1893.

The Real Rewards of Medicine. By W. W. Keen, M.D., LL.D. Reprinted from the College and Clinical Record, 1893

Surgical Clinic. By Nicholas Senn, M.D., Ph.D. Reprinted from the Chicago Clinical Review, 1893.

Fifteenth Annual Report and Proceedings of the Fifteenth Annual Meeting of the Charity Organization of Buffalo, N. Y., for the year 1892.

Apparent and Actual Mortality. By F. D. Bullard, A.M., M.D. Reprinted from the Southern California Practitioner, 1893.

Punctured Wounds of the Feet. A Report of Two Hundred and Three Cases treated at the Medical Bureau, World's Columbian Exposition, during the "Construction Period," June 1, 1891, to May 1, 1893. By S. C. Plummer, A.M., M.D. Reprinted from the Chicago Medical Recorder, 1893.

Twenty-seven Years' Addiction to Opium; Recovery; Relapse. By J. B. Mattison, M.D. Reprinted from the New England Medical Monthly, 1893.

Cocain Inebriety. By J. B. Mattison, M.D. Reprinted from the Medical Record, 1893.

The Mattison Method in Morphinism. By J. B Mattison, M.D. Reprinted from the Universal Medical Journal, 1893.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, Marine-Hospital Service. Under the National Quarantine Act of April 29, 1878. Vol. VII. Washington: Government Printing Office, 1893.

Bureau of Education. Circular of Information, No. 1. Shorthand Instruction and Practice. By Julius Ensign Rockwell. Washington: Government Printing Office, 1893.

The Treatment of Cholera by Hypodermoclysis and Enteroclysis. By Judson Daland, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

The Causation of Inflammation: A Review. By Harry Friedenwald, A.B., M.D. Reprinted from the New York Medical Journal, 1893.

The Interrupted Blood-columns in the Vessels of the Eye. By Harry Friedenwald, A.B., M.D. Reprinted from the Ophthalmic Review, 1893.

Cranial Deformity and Optic-Nerve Atrophy. By Harry Friedenwald, A.B., M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

Cholera: How Shall We Escape It? By H. A. Arnold, M.D. Pamphlet. Scranton, 1893.

The Stoechiological Cure of Consumption and Diseases of the Respiratory Organs. From Letters to a Patient. By John Francis Churchill, M.D. Second edition. London: David Stott, 1893.

Treatment of Summer Diarrhea of Children. By T. M. Baird, M.D. Reprinted from the Hot Springs Medical Journal, 1893.

Cholecystotomy. By Edwin Ricketts, M.D. Cincinnati, 1892.

Therapeutics of Cholera (Asiatic Cholera). By P. C. Majumdár, M.D. Philadelphia: Boericke & Tafel, 1893.

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ORIGINAL ARTICLES.

SPASMODIC AND ORGANIC STRICTURE OF THE ESOPHAGUS: A REPORT OF TWO CASES.

BY WILLIAM PEPPER, M.D.,
OF PHILADELPHIA;
PROVOST OF THE UNIVERSITY OF PENNSYLVANIA; PROFESSOR OF THE PRACTICE OF MEDICINE, ETC.

CASE I.—C. W. J., a paper-maker, aged forty-five years, was admitted to the University Hospital on April 8, 1893, suffering with difficulty in swallowing. The history, family and personal, was as follows: His father and mother both died in advanced life, the one with dropsy, the other from pulmonary tuberculosis. Three sisters died of scarlet fever and four were living, of whom one had been abed for two years with "nervous prostration." There was no other neurotic history. The patient himself had had scarlet fever severely when seven years old, with especially severe angina, and spotted fever at seventeen. After the latter age he had been uniformly well, excepting that he suffered from time to time with choking sensations, which he thought began after the attack of scarlet fever. He was never able to swallow a bolus of large size, and during the spells of choking he would be wholly unable to swallow. These paroxysms were frequent, and scarcely a week passed without more or less difficulty in swallowing. The duration of the paroxysms varied from an hour or two to a few days. The patient had been married twice and had had seven children, three of which had died in infancy. He was an immoderate smoker, but did not use alcohol excessively. His work had been very exacting, frequently occupying eighteen hours of the day.

The illness that brought him to the hospital had begun three weeks before, with difficulty in swallowing like that which he had so frequently experienced, but instead of relief after a few hours or days, the dysphagia grew worse until he declared that there was inability to swallow even water. Meantime he had been rapidly losing in flesh and strength, his weight being 122 pounds, as against his normal weight of 142 pounds.

I was called to see him at his home, and found that a diagnosis of incurable organic stricture had been made, and that his death was confidently expected at an early day. His appearance certainly did not make the prognosis seem improbable. He was advised to go to the hospital immediately.

On admission the patient was greatly emaciated and extremely weak, and his appearance was not unlike that of a man in the last stages of a chronic wasting disease. The skin was dry and wrinkled and the mucous surfaces pale. He was offered a glass of water, but on repeated effort was unable to swallow the least part of it. His temperature, as might be inferred from his general state, was subnormal, but the rate of the pulse and that of the respiration were increased. The urine was scanty and high-colored, but normal in other respects. The patient was in a somewhat excitable condition and disposed to be dramatic in the description of his sufferings. During the first twelve hours in the hospital he took no food at all, but on attempting to swallow milk promptly regurgitated the whole of it.

The diagnosis in such a case as this is a most important matter. In any case in which there is a history such as this man gives, of paroxysmal dysphagia, attacks coming and going at short intervals and with great suddenness, our first thought naturally suggests spasmodic contraction; but we must never be guided too strictly by a history received from the patient himself. Still, in this case, we had also the confirmatory story of the patient's friends, who are intelligent and judicious people, that he had for a long time suffered paroxysms such as he described; that his present disease had begun just three weeks before his entrance into the hospital, and that the loss of flesh had been as great as he stated.

With this history it could not be doubted that the man had formerly suffered from spasmodic stricture, though his sex and age and character as a steady, hard-working man were against this diagnosis. Still it is by no means unknown to find the disease among males even of somewhat advanced years. Another question, however, presented itself, and the decision of this would have required special investigation—that is, whether there was not secondary organic stricture to account for the present and persistent dysphagia and the great emaciation. Certainly no one looking at the patient and knowing only the history of his disease during the three preceding weeks could have believed this to be a case of spasmodic stricture, for, though the complaints of patients with esophagismus are often more loud and the attempts at swallowing apparently more futile than in organic stricture, there is usually fair preservation of the weight, and there may be no emaciation at all. Certainly the rapid and extreme loss in weight in our case was an unpleasantly suggestive symptom, especially when taken in relation with the age of the patient. In this aspect of the case it is interesting to recall that a neoplasm or other lesion of the esophagus or surrounding parts may, by reflex action, give rise to paroxysms of dysphagia long before the lumen of the esophagus is sufficiently encroached upon to occasion continuous obstruction. In such a case, however, the complete occlusion would have come on gradually, and there would have been a slow transformation of paroxysmal into continuous dysphagia, whereas in our patient the final attack was quite as sudden in onset as any of the previous lesser ones. It is also possible that repeated spasm of the esophagus may eventually lead to fibroid overgrowth and stricture of the walls, much as the

spasmodic contractions of the pylorus from hyperacidity are believed to sometimes occasion fibroid thickening in that situation; but here again a gradual increase of dysphagia would occur, and not a sudden obstruction; and, besides, it has not been definitely proved that fibroid stricture does so occur.

The sudden onset, the previous history, the suspicion of neurotic character imparted by the somewhat dramatic tone and manner of the patient, and the nature of his efforts at swallowing, all inclined us to view the case as one of purely spasmodic stenosis, and encouraged the hope that we could relieve the apparently desperate condition in spite of the fact that the man had suffered such extreme emaciation and presented other appearances of a serious organic disease.

On the morning following his admission to the hospital, he was, with considerable formality, taken before the medical class in order that the attempt to pass an esophageal bougie might be made. He was warned solemnly that even if it were found that no organic stricture existed, it would be necessary to repeat the operation frequently unless the power of swallowing returned. The result was that in spite of considerable pain and difficulty the largest size was at once introduced into the stomach. There could now be little doubt of the nature of the case, for, had there been even a slight obstruction of organic nature, it would have been impossible to pass a sound of the dimensions of that used. For some hours after the passage of the instrument the patient complained of pain in the chest and of persistent inability to swallow. Galvanism of the neck was then resorted to, one pole being placed posteriorly, the other anteriorly, and at the same time chloral was administered in peptonized milk by the rectum. Two hours later the patient asked for a glass of milk, which he drank without the slightest difficulty; and during the succeeding night, and for several days, he ate and drank all forms of food ravenously and without the least sign of dysphagia. The improvement in the patient's appearance was remarkable. Almost at once his features assumed a healthier appearance, and in a single week he had gained seventeen pounds, when he was discharged from the hospital apparently well; and in the seven months which have elapsed there has been no recurrence.

Much interest attached to this case in the first place on account of the extreme and rapid emaciation and the appearance of serious organic disease in a man whose age would at once suggest the possibility of esophageal carcinoma; so that the diagnosis was of the greatest importance. Cases of this kind have been reported before, and, indeed, there have been a few in which death has occurred; but they are exceedingly rare, and the latter are not free from suspicion of some underlying affection which has been overlooked.

In the further treatment of our patient it was necessary first of all to determine, if possible, the cause of the spasms, and to institute such measures as would obviate a recurrence. There was no question but that the hereditary neurotic element, which was so marked in the case of the sister, who was confined to her bed for two years, played a most important part, and it was necessary to reduce to the minimum all depressing conditions that might call this neurosis into active operation. Overwork, doubtless, was one of these exciting causes which would require careful regulation. Another was the immoderate use of tobacco. Perhaps a proper restriction of both of these factors, aided by the powerful moral impression produced by the passage of the bougie, would alone have sufficed to prevent recurrence; but to still further guard against relapse we ordered for him a mixture containing elixir of ammonium valerianate, with the purpose of tranquillizing nervous excitement. The fact that there has been no relapse is conclusive that these measures have struck at the root of the trouble, and it may be hoped that with this treatment and with the use of suitable tonics recurrences may be entirely obviated. It is always interesting to inquire what subtle anatomic or physiologic influence may exist to determine the localization of affections evidently originating from constitutional tendencies and general predisposing causes. I incline to think that in this case the peculiar and rare expression of the neurotic diathesis and of the depressing influence of overwork and tobacco excess is to be further explained by the anatomic datum of a narrow esophagus at the cricoid level and by the lasting impairment of physiologic tone left by the severe scarlatinal angina.

Quite different from the first case is one that occurred in the wards at the same time, and which is useful to contrast with the other. The history is as follows:

CASE II.—J. S., aged fifty-five years, a laborer, was admitted to the University Hospital, complaining of great weakness and difficulty in swallowing, and vomiting. There was nothing in the family history bearing on his condition. He had been a very hard drinker, and had lived an exposed life. There was no evidence or history of syphilis. He had never been ill excepting after injuries. He had dislocated his shoulder, and had suffered necrosis of the jaw from injury in the extraction of a tooth. Some years previously he had suffered considerably with hemorrhoids. A year before his entrance into the hospital he began to lose in flesh and strength, and found that he would easily grow faint. He never fell, but frequently became very dizzy. At the same time he had difficulty in retaining food, and gradually abandoned solid diet entirely. It was impossible for him to continue at work, and he was admitted to a hospital, where esophageal bougies were passed.

On admission to the University Hospital, he was greatly emaciated, the ribs standing out prominently and the belly being scaphoid. The skin was dry and harsh, and of an icteroid hue. On physical examination it was found that the percussion-note over the lungs was hyper-resonant and the breath-sounds were feeble, with prolongation of expiration. Posteriorly there were snoring and subcrepitant râles near the bases. The cardiac dulness was difficult to determine, but was apparently much decreased. The heart-sounds over the apex, as well as over the aortic region, were extremely feeble, and sometimes almost inaudible. The apex-beat was quite

invisible and impalpable. The hepatic dulness extended from the seventh rib to the costal margin in the nipple line. Over the abdomen there were numerous greatly distended veins, especially at the sides; and on palpation the aorta could be distinctly grasped. The patient was so weak that he was confined to bed, and there was evidently considerable anemia. Examination of the blood showed 3,950,000 red blood-corpuscles to the cubic millimeter and 65 per cent. of hemoglobin. The urine was normal.

At every effort to take solid food there was extreme distress, and very soon regurgitation of the food mixed with considerable mucus. Evidently the food did not reach the stomach. The man was, however, able to swallow milk, though even this was often regurgitated.

There was evidently in this man esophageal obstruction of high grade and organic in nature. The history and the actions of the patient were in sharp contrast with those in the other man, though each was emaciated and sallow. In the present case, however, the esophageal bougie was resorted to with some hesitation for the reason that certain features in his case made aneurism of the aorta not improbable. The radial and temporal arteries were rigid; there was marked arcus senilis and evidence of arterial degeneration also in the reduced size of the liver. Careful physical examination, however, failed to reveal any evidence of aneurismal dilatation of the aorta, either by the existence of dulness or abnormal pulsation or by alteration in the heart-sounds or pulses. The question of aneurism was therefore dismissed. The smallest esophageal bougie was finally introduced into the esophagus. Six inches below the incisor teeth this met with some resistance, to overcome which pressure was required, but the instrument finally slipped on as if over a ridge. This was doubtless the projection of the cricoid cartilage. Eleven inches from the teeth there was a second and decided obstruction, through which the instrument could not be pressed without the use of unwarrantable force. After some manipulation it was determined that a little pressure sufficed to insinuate the bougie into the upper part of the narrowed portion, below which a greater narrowing prevented further penetration. There was no doubt, therefore, but that there was decided organic constriction, and it remained only to determine the nature of the stenosis.

Practically the three important causes of organic stenosis, apart from compression of the tube from without, are strictures following chemical irritants, syphilitic stricture, and carcinoma. The first of these was easily disposed of, for it would scarcely be possible for the patient to have forgotten the swallowing of a substance corrosive enough to occasion a subsequent stricture. Syphilis, however, must not too readily be set aside, for the patient may be ignorant of the infection or may wilfully conceal its existence. We must look to the physical examination to reveal other evidences of syphilis, such as enlarged post-cervical, epitrochlear, and inguinal glands, scars about the legs or elsewhere, periosteal nodes, old iritis and the like. The most careful examination and the most cautious questioning of our patient, however, made it certain that he had never acquired syphilis, and we were forced to conclude that the stenosis was due to carcinoma. This diagnosis accorded very well with the manner of onset of the disease, with the age, and with his general condition. Sometimes it is possible to obtain definitely conclusive evidence by the discovery of secondary nodes in the liver or in the lymphatic glands of the neck, but metastasis is present in only a minority of instances, and was wanting in this case.

The question of treatment in cases of esophageal carcinoma is in all respects similar to that of other forms of stenosis. The passage of bougies at regular intervals seems to keep the lumen of the esophagus open, by dilatation and possibly by repressing the exuberant growths upon the surface. Sometimes in the course of esophageal carcinoma with almost complete obstruction, there is sudden cessation of the symptoms, so that the case may simulate spasmodic stenosis, until the subsequent recurrence and course prove conclusively the nature of the case. In these instances there has been more or less ulceration on the surface of the growth, which leads to the sudden detachment of a slough and the consequent disappearance of the obstruction and the attendant symptoms. By passing bougies systematically we favor this tendency and may maintain the opening for a considerable length of time. It is always to be remembered, however, that the passage of the instrument is attended with the danger of perforation through the softened and ulcerating tissues. When the stenosis is considerable, therefore, no amount of force should be used, but by successive gentle efforts it may be possible to overcome the stricture. In any case, and no matter how well the lumen of the esophagus is maintained, the strength of the patient gradually declines, cachexia becomes more profound, and death finally occurs from exhaustion. The fatal issue may be somewhat postponed by rectal alimentation, and morphin promotes euthanasia. The operation to establish a gastric fistula has been performed repeatedly, but there is little hope of prolonging life in this way, for the esophageal growth tends to extend to the mediastinum and lungs, and to involve other organs by metastasis.

The Communicability of Tuberculosis.—The Michigan State Board of Health has decided to include all diseases dependent upon the presence of the bacillus tuberculosis in the official list of "diseases dangerous to the public health," of which notice is required to be given by householders and physicians to the local health officer as soon as such a disease is recognized.

TROPICAL DIARRHEA.[1]

BY SURGEON-GENERAL SIR JOSEPH FAYRER,
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TROPICAL diarrhea, diarrhea alba, white flux, sprue, psilosis, etc., are synonyms applied to a form of disease that occurs as the result of residence in China, Cochin China, Batavia, Java, the Indian and Malayan peninsulas, Ceylon, and probably in other tropical and sub-tropical countries, and occasionally in extra-tropical regions.

This is a form of disease that, if not always, is generally the result of tropical and climatic influences, and the debility and cachexia thereby induced. It is now not infrequently observed in Europe, owing to the ever-increasing means of communication with foreign countries. It is apparently generally confined to adults, is insidious in onset, slow in progress, and, owing to irreparable degenerative changes, when not arrested sufficiently soon, is often fatal.

It has been described by many observers, both English and foreign, in India, China, and Batavia. Most of the cases seen in this country come from China, India, or Ceylon. In India it is frequently met with, where a form of it is known as "hill diarrhea," from its proneness to affect dwellers in hill stations, especially those who have previously lived on the plains. Atmospheric changes, vicissitudes of temperature, greater altitude, rarefied atmosphere, and possibly water, are concerned in its causation. Some authors consider it a disease distinct from the white flux, which may be seen in any part of the country, but they are so much alike as, for practical purposes, to justify the belief in their identity. Occasionally there is a resemblance to certain forms of chronic dysentery. The two conditions may be associated, or one may merge into the other.

Tropical diarrhea occasionally makes its appearance years after the subject of it has returned from the tropics. It not unfrequently begins without any previous apparent derangement of health, though it is sometimes preceded by dysentery, diarrhea, some indication of malarial infection, or functional derangement of the liver, or other abdominal viscus, and is not noticed until excessive soreness of the tongue, and loss of strength and wasting, reveal the gravity of the condition.

People in India, suffering from malarial cachexia, are likely to be troubled with diarrhea of an irregular character, which, if not promptly dealt with, may be the precursor of the chronic form, and is often obstinate enough, especially if there be hepatic or splenic complications, or any vestige of previous dysentery, but it is not so grave in character as the white diarrhea. This latter, however, in all its forms, if carefully and promptly treated at the outset, and unattended by structural changes in the viscera, is comparatively amenable to control.

SEMEIOLOGY.—This form of diarrhea, as I have said, may begin with simple looseness of the bowels. or may supervene upon an ordinary diarrhea or chronic dysentery. The action produces a sense of relief. The dejecta at first may be natural and bilious, but gradually become light-colored, frothy, pultaceous, and copious. As the disease advances they are occasionally tinged with blood, and the sufferer becomes more attenuated, exhausted, and incapable of any prolonged exertion. The appetite may be good, but rawness and tenderness of the mouth and tongue, frequently accompanied by aphthous spots and ulcerations, interfere with its gratification. Deficiency of bile is suggested by the appearance of the dejecta, whilst the microscope detects vegetable and fibrous tissue, or other portions of the ingesta passing unaltered, as well as certain forms of microorganisms. This light color, which is irrespective of the nature of the diet, is not due to any specific disease of the liver, which only shares with other organs the shrinking due to general wasting.

Diarrhea is not always a prominent symptom of this disease, and, according to my experience, cases occur more frequently in patients from Ceylon, where general wasting and soreness of the tongue are the chief characteristics, though, at the same time, the excreta are of normal color.

The subjects of tropical diarrhea are pale and emaciated, with the skin dry, flaccid, sallow, and sometimes pigmented in patches. The abdomen is soft and flaccid, the eyes become pearly and sunken, the gums pale and shrunken, the lips and conjunctivæ blanched and anemic. The tongue, at first pale and flabby, becomes shrunken, red, and glazed; the papillæ are obliterated; it is raw, smooth, and tender, often affected, as is the buccal mucous membrane, by aphthous ulceration, and in some cases covered with a black coating of white epithelial scales. The state of the tongue is generally significant of the stage of the disease, return to the normal condition being a hopeful sign, while increased smoothness and tenderness, with aphthæ, are of evil augury.

Evidences of malarial influences are shown at the outset, and sometimes in the course of the disease, by recurrences of fever, by vague conditions of malaise, or by myalgic or neuralgic disorder.

The symptoms described may be mitigated by treatment, but the improvement is often more apparent than real. The disease slowly and surely

[1] Read before the International Congress of Public Health, Chicago, 1893.

progresses until the patient is compelled to seek change of climate. Should this be of no avail, the symptoms increase in gravity; the breathing becomes feeble and accelerated; the temperature subnormal; the extremities edematous; anemia is profound, and the urine often albuminous; the catamenia are suspended or diminished. If this evil condition be not arrested, and it seldom is checked when it has gone so far, fatal exhaustion or pulmonary embolism or thrombosis soon closes the scene.

This condition appears to be the consequence of general degeneracy rather than specific disease of any one organ, though the intestinal tract seems to be the seat of the most marked change.

Morbid Anatomy.—When death has occurred at an early period the intestines have been found contracted, with the mucous lining thickened, congested, and even ulcerated; but when death takes place at a later period, the coats of the bowel are found to be attenuated, diaphanous, and the seat of fatty and lardaceous degeneration, with occasional ulceration in the ileum or colon. The intestinal and mesenteric glands are atrophied and degenerated, the latter sometimes enlarged. The mesentery itself is wasted, the liver shrunken, pale, and contracted, so as in life to have given rise to the belief that it was specially atrophied. The spleen, pancreas, and kidneys are in a similar condition. Occasionally, though not in ordinary cases, there may be chronic enlargement of the liver, or of the spleen, or of both. There is not so much surface-change as thinning of all the coats of the small intestine, so that they become translucent; when dysenteric symptoms have appeared, ulceration of portions of the colon has been found. According to the experience of Dr. McConnell, professor of pathology in Calcutta, amyloid degeneration of the bowel is rare among natives of India, but he confirms the accuracy of the account given by Dr. D. D. Cunningham, of the morbid anatomy of the intestines of the sufferer from chronic diarrhea and dysentery in famine seasons. The valuable report of Dr. Cunningham on the famine diarrhea—of which the condition is probably analogous to that now under consideration—shows how the degenerative changes involve the intestines, as well as the other viscera, and the general result of the entire series of observations on the morbid anatomy is to show that the diseased conditions were specially characterized by extreme general anemia and destructive processes affecting the mucous membrane of the intestinal canal. This latter characteristic is also pointed out by Aitken and Virchow. The absence of epithelium and the obliteration of villi are very remarkable in the tongue, and besides these characteristics an absence of fat and a general wasting of the tissues are conspicuous.

With regard to the bacteriology of the diseased conditions due to tropical diarrhea, Professor Macfadyen points out that in the normal bacteriology of the digestive tract there are a large number of bacterial species, and that this is the case also in the normal small intestine, no one kind predominating. Its contents have a faintly acid reaction, which has inimical effects on the growth of organisms. The bacteria normally present in the small intestine ferment carbohydrates, but do not decompose albumins.

Dr. Macfadyen found the stools from a case of tropical diarrhea to be crowded with microörganisms, of which one kind, a bacillus, predominated; it was like the anthrax-bacillus, somewhat thickened, with flattened ends, and motile. He found no ameboid organisms, but, as he remarks, that does not prove that they were not there. It has, he maintains, undoubtedly been proved that in some diseases of the digestive tract, occurring in hot climates, large numbers of ameboid organisms are to be found in the large intestine. Many interesting investigations into this subject have been made by Kartulis, Osler, of Baltimore, Councilman and Lafleur, and others, but we are not yet in a position to assign them a definite *rôle* in the causation of intestinal disease.

Dr. Thin describes the cultivation of thirteen distinct forms of organisms that he obtained from a case of this disease, and their different effects on gelatin. In a more recent communication (April, 1892), he brings forward reasons to show that in the so-called sprue the reactions of the intestine are abnormal, and he argues that this must induce abnormalities in the development of the bacteria normally present in the bowel, which in its turn might account for the abnormal coloring of the stools.

Treatment.—From the insidious character of the disease, tropical diarrhea not infrequently gains ground before radical measures for its relief are resorted to. Successful issue depends much on the patient's resolution and perseverance in carrying out instructions. Alternations of temperature, errors of diet, fatigue or excitement, exertion, mental or physical, should be avoided. Physiologic rest should be insisted on.

There is a tendency in the earlier stages to get well. The object is to favor this tendency, and not thwart it by neglect of precautions. Diet is the most important consideration, and must be strictly regulated and adhered to; and scarcely less important is the question of clothing, habits, and mode of life.

Milk should be the sole and only diet, and it must be given in small quantities, often repeated, say from four to six ounces every hour, day and night. Larger

quantities at longer intervals will not do. When in the twenty-four hours an adult is able to take from three to four quarts of cow's milk in this way, ample nourishment is afforded to support his strength and to enable him to recover.

This method of treatment was begun by me before leaving India in 1872. After prolonged experience and trial of all other forms of remedies, I have found it more effective than anything else. It seldom fails, except in the very advanced and chronic cases, or in very aged persons. In ordinary cases it must be adhered to for three weeks, a month, or six weeks, when changes or additions may be tentatively and gradually made. Occasionally it may be expedient to add a little water, lime-water, or soda-water, but it is seldom necessary to dilute the milk. Tea, coffee, or cocoa, as a general rule, disagree. Alcoholic stimulants for those who have long been accustomed to them may be necessary, but should be cautiously administered in limited quantities (from two to six ounces a day). The best are old brandy or whiskey given with the milk or some alkaline water. As a rule, all wines are unsuitable. Regularity in times of administration, and the quantity of milk given, is most essential. It is generally well to begin with two or three ounces per hour, increasing to six. In very aggravated cases it may be expedient to give one or two ounces every half-hour. If, after three weeks or a month the diarrhea has entirely ceased, and for some time, if the tongue be less red and sensitive, and if the papillæ have reappeared, a slight addition may be made, but not unless this is the case. After taking the milk for some days the tongue becomes coated with white fur, but is less red at the tip and edges; the aphthæ often present disappear, as well as the abnormal sensitiveness. The diarrhea probably gives place to constipation, and the patient feels better in all respects. When this condition has been attained a change in diet may begin.

At first bread, not recently baked, and thoroughly incorporated as crumbs in the milk, may be added in small, gradually increasing quantities. After a week or more, a little finely minced mutton or chicken, not previously cooked, may be given. If the improved condition continues, a little light pudding or other farinaceous food should be given, followed by a very tentative and gradual return to meat and vegetables and other light food, but if any sign of irritation recurs, milk-diet should be at once resumed, and continued until all disturbance has ceased. It is very difficult for the patient to realize the danger of indiscretion, the need for care and caution, but these difficulties are often surmounted and complete recovery takes place.

In addition to these precautions in diet, others must be observed. These are warmth, complete rest, and, if possible, residence in some mild and sheltered locality. The latter, however, is not to be insisted on if it involves the loss of the care, comfort, and attention of home-nursing. The greater part of the twenty-four hours should be passed in a recumbent position, at any rate in the earlier stages. As the condition improves—of which the state of the tongue, as well as a diminution of the diarrhea, is the best indication—the patient may take moderate exercise, but all fatigue should be avoided. Long after recovery is apparently complete, vicissitudes of temperature, over-fatigue, and errors in diet must be carefully avoided. It may be necessary to delay return to a tropical climate for a year, if not indefinitely.

The careful use, in the early morning, of saline laxatives, combined with some bitter infusion, may be beneficial to relieve abdominal plethora and portal congestion, but care must be taken not to produce overaction. To allay irritability and to give tone, small doses, from three to five drops, of liquor arsenicalis, twice a day, continued over a period of weeks, with occasional breaks of three or four days, may be beneficial. When the bowel is very irritable, with pain and a tendency to watery discharges, doses of from five to ten minims of tincture of opium, or a few grains of Dover's powder, may be useful. Later on, as recovery progresses, mild preparations of iron, especially the potasso-tartrate, may be beneficial. Experience, however, has shown that with the exceptions already alluded to, drugs are of little use.

The hygienic and dietetic precautions mentioned are generally successful, unless visceral complications of a structural nature have occurred, or the patient be exhausted by age or debility, or the disease be in a very advanced stage. Unhappily, many who fall in the latter category succumb, whilst some suffer frequent relapses from neglect of rules laid down, and die from inanition and exhaustion; hence the necessity for early treatment and rigid adherence to the simple though irksome regimen which experience has shown to be the best. When the milk has failed, it has frequently been because it had been mixed with other food, or has been taken at irregular intervals and in too large quantities at a time.

The conclusion is that, though drugs are generally of little avail, if milk, taken as prescribed, does not succeed, there is but small chance that any other form of treatment will do so.

De Renzi has succeeded the late Professor Cantani at the first medical clinic at Naples, while Carderelli succeeds De Renzi at the second medical clinic.

REPORT OF A FIFTH SERIES OF CASES OF ENTERIC OR TYPHOID FEVER TREATED BY SYSTEMATIC COLD BATHING IN THE GERMAN HOSPITAL, PHILADELPHIA.

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FROM the introduction of the treatment of enteric fever by systematic cold bathing according to the method of Brand, in the German Hospital, February, 1890, until June 1, 1892, 226 cases were treated, of which number twelve terminated fatally, giving a death-rate of 5.3 per cent. The hospital statistics relating to the subject were published in detail in this journal last year.[1]

During the year terminating June 1, 1893, 74 additional cases have been treated by this method, bringing the total number up to 300.

The following table, compiled from the records of the hospital by Dr. Hand, resident physician, shows in detail the date of admission, the sex, age, the day of the disease as nearly as could be ascertained upon which the patient entered the hospital, the highest recorded temperature, the first day of the attack upon which the temperature fell to normal, the number of days in the house, and the number of baths administered in each case:

CASES OF ENTERIC FEVER TREATED BY SYSTEMATIC COLD BATHING.

Series No. 5. June 1, 1892, to June 1, 1893.

No.	Admitted.	Sex.	Age.	Day of disease.	Max. temp.	First day normal temp.	Days in house.	No. of baths.
1	May 25	F.	25	10	105.8	38	61	151[2]
2	June 3	M.	15	8	104.8	22	39	33[3]
3	7	F.	19	10	105.8	30	60	94
4	9	F.	16	...	.....	...	16	8
5	21	M.	22	8	104.4	15	30	31
6	22	F.	29	...	.....	...	34	28
7	July 14	M.	36	10	105	...	16	69[4]
8	15	M.	26	5	105.6	23	42	67
9	24	M.	36	6	104.8	15	40	43
10	29	M.	24	12	104.2	18	28	23
11	29	F.	21	4	104.4	17	49	109[5]
12	Aug. 3	M.	38	7	104.2	15	40	34[6]
13	4	F.	30	3	104.6	17	48	53
14	11	F.	21	14	103.4	31	63	53[7]
15	12	M.	18	3	104.4	10	31	47
16	12	M.	25	4	104.2	18	43	66[8]
17	16	M.	46	...	104	...	29	31
18	18	M.	16	6	104.2	18	42	12[9]
19	18	F.	18	12	102.4	18	37	7
20	25	M.	33	8	104	16	24	29
21	30	M.	32	6	103	13	31	8
22	Sept. 1	M.	22	...	102.2	...	19	2
23	1	M.	31	7	103 6	22	29	17
24	1	M.	26	14	105.2	28	29	59[1]
25	4	M.	28	5	104	12	21	20
26	4	F.	66	30	104.4	47	51	24
27	7	M.	18	4	104.6	12	40	31
28	16	M.	19	...	.....	...	34	69
29	21	F.	31	7	104.4	16	33	25
30	23	F.	27	4	104.8	15	29	37
31	23	M.	30	...	104.6	...	34	32
32	26	F.	19	10	105.4	16	23	97[2]
33	Oct. 8	M	32	4	105.6	19	34	61
34	10	M.	23	...	104.6	...	23	31
35	12	M.	28	...	103.4	...	19	3
36	16	F.	24	7	104.2	14	50	19[3]
37	31	M.	17	...	104	...	29	2
38	Nov. 2	M.	23	...	106.2	...	42	17
39	4	M.	23	...	104	...	29	3
40	4	M.	22	...	104.6	...	29	14
41	6	M.	23	...	105 4	...	21	41
42	13	M.	19	...	104 2	...	22	12
43	17	M.	19	...	104.2	...	30	64
44	Dec. 15	M.	27	...	104.6	...	31	82
45	16	M.	46	...	103.4	...	28	22
46	19	M.	21	...	106	...	40	195[4]
47	31	F.	19	4	104.4	11	26	24[5]
48	Jan. 3	F.	17	5	104.8	23	37	21
49	Feb. 18	M.	20	7	105	...	12	34[6]
50	20	M.	23	9	102.2	15	21	3
51	23	M.	49	...	102.6	...	35	7
52	23	M.	19	7	104	15	32	48
53	24	M.	15	6	106.2	...	17	113[7]
54	25	M.	24	7	104	17	42	67[8]
55	Mar. 3	M.	30	...	105	...	39	20[9]
56	3	F.	22	5	104	45	82	147
57	12	F.	18	4	103.4	14	69	12[10]
58	28	M.	26	7	106.4	...	20	123[11]
59	29	F.	19	4	104 4	16	38	47
60	April 3	F.	28	8	105.8	29	77	105
61	5	M.	26	3	104.4	21	37	103
62	12	M.	24	8	104.8	...	8	45[12]
63	22	M.	42	8	105.2	26	43	60
64	23	F.	29	12	103.2	18	70	4[13]
65	May 5	F.	27	6	104	14	29	16
66	9	F.	18	2	105	19	41	20
67	10	F.	29	5	104.6	20	35	38
68	12	M.	20	8	105	16	27	36
69	13	M.	18	12	105.8	...	20	95[14]
70	15	M.	21	8	104.6	18	70	76[15]
71	20	F.	20	2	105 4	16	37	53
72	29	M.	18	10	103.8	22	20	28
73	29	F.	25	3	105	20	89	75
74	30	F.	20	3	104.8	19	49	25

Total number of cases, 74; deaths, 8; mortality, 10.8 per cent. Relapses, 10—13.5 per cent.

The patients were chiefly adolescents and young adults. Children are not received into these wards, as there is in connection with the hospital a children's infirmary; 58 cases (78 per cent.) were under 30 years of age.

[1] MEDICAL NEWS, November 26, 1892.
[2] One relapse.
[3] Repeated hemorrhages.
[4] Death.
[5] One relapse.
[6] One relapse.
[7] One relapse.
[8] *Vide* post-mortem note.
[9] Repeated hemorrhages.
[1] One hemorrhage.
[2] One relapse.
[3] One relapse.
[4] Meningitis and death.
[5] One relapse.
[6] Lobar pneumonia on the twenty-first day.
[7] Remained for treatment for organic nervous disease.
[8] Relapse and death.
[9] Relapse and death.
[10] Repeated hemorrhages, pneumonia, and death.
[11] One hemorrhage.
[12] Death.
[13] Hemorrhages and death.
[14] Hemorrhages and death.
[15] One relapse.

From	15	to	20	years	.	.	.	.	20
"	20	"	25	"	.	.	.	.	21
"	25	"	30	"	.	.	.	.	17
"	30	"	35	"	.	.	.	.	8
"	35	"	40	"	.	.	.	.	3
"	40	"	45	"	.	.	.	.	1
"	45	"	50	"	.	.	.	.	3
	66	years	.	.	.	.	.	.	1
				Total	.	.	.	.	74

Baths: Average number, 44; smallest, 2; largest, 195. Average number of days in the hospital of the non-fatal cases, 33.

Notes on the fatal cases:

No. 7.—G. H., male, thirty-six years of age, was admitted on the tenth day of the disease, having had hemorrhages before admission; he lived sixteen days in the hospital.

No. 32.—M. L., female, nineteen years of age, was admitted on the tenth day of the disease; normal temperature on the sixteenth; relapse on the nineteenth; death on the thirty-third.

No. 46.—A. K., male, twenty-one years of age, admitted in a very weak condition; about the second week of the disease, pulse 172, temperature 106°; improved with the baths, and temperature came down to normal; after a week, relapse began; emaciation extreme; death at the end of the second week of the relapse.

No. 49.—J. K., male, twenty years of age, admitted on the seventh day of the disease; hemorrhages on the ninth day; pneumonia on the fourteenth day; death on the nineteenth day.

No. 53.—G. S., male, fifteen years of age, admitted on the sixth day of the disease; in the morning remissions during the first week the temperature was but twice down to 103.5°; highest temperature 106.2°; developed meningitis and died on the twenty-second day.

No. 58.—B. S., male, twenty-six years of age, admitted on the seventh day of the disease and had great mental depression from the outset; died on the twenty seventh day.

No. 62.—J. C., male, twenty-four years of age, a "walking case," admitted on the eleventh day of the disease, with spots; hemorrhages on the fourteenth and fifteenth days; passing by the bowel one hundred and seven ounces of material consisting largely of blood; death on the fifteenth day.

No 69.—W. C., male, colored, eighteen years of age, admitted on the twelfth day of the disease; hemorrhages on the twenty-fifth and twenty-sixth days of the disease; death on the thirty-first.

The total number of cases treated by this method to June 1, 1893, is 300; total deaths, 20—giving a death-rate of 6.6 per cent. In the entire series of 300 cases relapses occurred in 29 instances; more than one relapse in two cases.

The following statistics, though based on a relatively small number of cases, support the generally accepted statement of Brand that the influence of the treatment upon the mortality is proportionately favorable as it is instituted early in the course of the attack.

In Series No. 5, 20 cases were admitted on or before the fifth day of the disease; of these, none died. Forty-two cases were admitted prior to the tenth day; of these, 4 died, giving a mortality of 9.5 per cent. Twelve cases were admitted after the tenth day; of these, 3 died, giving a mortality of 25 per cent. The day of the disease upon which the patient was admitted to the hospital was not noted in 20 cases.

In Series No. 4,[1] 12 cases were admitted on or before the fifth day; of these, 1 died fifteen days later of a complicating meningitis. Thirty-six cases were admitted before the tenth day; of these, 2 died, giving a mortality of 5.5 per cent. Six were admitted after the tenth day, with 1 death, giving a mortality of 16 per cent. The day of admission was not noted in 24 cases.

Taking Series 4 and 5 together, we note that of 32 cases admitted not later than the fifth day 1, or about 3 per cent., terminated fatally. In 78 cases admitted prior to the tenth day, the death-rate was 7.7 per cent., and in 18 cases admitted after the tenth day the death-rate was 22 per cent.

The dictum of Brand, that none of the cases in which the treatment is instituted prior to the fifth day are likely to terminate fatally, is well known. The fatal case in the fourth series, a boy aged thirteen, was admitted on the third day. The cause of death in this case, however, was meningitis occurring as an early complication.

In civil practice, except in local epidemics, the positive diagnosis of enteric fever can rarely be made as early as the fifth day. In hospital practice only a small portion of the enteric fever cases are received before the fifth day. In the service of the German Hospital patients are subjected to the bath-treatment if, upon admission, the diagnosis of enteric fever is probable or becomes so by exclusion. This practice has led to very few errors in diagnosis.

It is understood that in by far the greatest number of instances the date of the beginning of the fever can only be approximately determined; only exceptionally does the disease begin with an abruptness that fixes definitely the day or hour of its onset. The general rule in taking the cases has been to date the beginning of the attack from the day on which the patient regarded himself as having fever or on which he was obliged to give up his occupation. The appearance of the eruption and enlargement of the spleen, which usually may be noted on the seventh or eighth day, rarely as early as the sixth and seldom so late as the tenth, are clinical events which aid in fixing the date of onset.

Ephraim, of Breslau, in a recent communication

[1] THE MEDICAL NEWS, November 26, 1892.

on "The Significance of the Statistical Method in Medicine,"[1] says: "The statistics of the cold-water treatment of enteric fever are untrustworthy because this disease shows the widest variations in its prognosis, and because for this reason an enormous number of observations are necessary to establish the value of a method of treatment."

The treatment of enteric fever by systematic cold bathing according to the method of Brand now rests upon statistics that fulfil the second requirement of this criticism. The number of reported cases is enormous. They are the results of work done by different observers in all parts of the world, and many of the collections of cases, as those of Brand himself, those of the military physicians at Lyons, those of Hare of Australia, are sufficiently large in themselves to establish the value of this method of treatment.

To these we may now add the statistics of the German Hospital in Philadelphia, which are based upon the observation of a sufficient number of cases and extend over a period of time sufficiently extended to eliminate in part at least the errors arising from the variations in the prognosis of individual cases and in the intensity of epidemics in different years.

Certainly the literature of internal medicine shows no aggregate of statistics in regard to the treatment of any other disease that has reached such proportions and in which the treatment has been carried out with the same rigid adherence to rule.

A remarkable and instructive fact is this, that the statistics from various quarters and from relatively large and small collections of cases show a mortality percentage that is as a rule nearly constant, so that we may now regard it as demonstrated that the death-rate of enteric fever under the treatment of Brand, instituted early in the attack and rigorously carried out, does not range beyond 6 or 7 per cent., while the general statistics show a mortality under various other forms of treatment, most of which are essentially expectant-symptomatic, ranging from 15 to 25 per cent., and exceptionally, far higher.

It seems hardly necessary to dwell upon the importance of this difference in death-rate. What argument in favor of the treatment by systematic cold bathing can be more urgent or more conclusive? From eight to fifteen or more lives saved in every hundred cases, and this in the endemic fever of our historic period—an infection from the effects of which no large community is ever free—which is kept alive and fostered by the methods of living in civilized countries in this age! The from eight to fifteen lives lost in every hundred by adherence to obsolete and traditional methods are, as a rule, picked lives. They are taken from the best—adolescents, young adults, the very flower and hope in every community. This is not the place to speak of the emotional effects of this sacrifice of life to routine. It is, however, proper to suggest the economic aspect of the matter, the appalling waste of young life that could so easily be saved.

We in the Western world are in the habit of speaking somewhat scornfully of Oriental apathy. Enteric fever and tuberculosis, the endemic scourges of our civilization, are in theory at least preventable diseases. Enteric fever is a disease in which, as has been demonstrated, the death-rate can be lowered from between 15 and 25 per cent., to 6 or 7 per cent., by the abandonment of traditional methods of treatment and the adoption of a different plan. Yet the older methods prevail.

Redmond, in a paper read before the British Medical Association in August, 1893,[1] makes the following remarkable statement:

"With the exception, however, of a paper by Dr. Sidney Coupland, in the *Lancet* for 1884, so far as I am aware, no attempt has been made through the medium of the medical journals to popularize the principle and remove that prejudice the undoubted existence of which, both in the professional as well as the public mind, constitutes the chief obstacle to the more general adoption of a line of treatment the practical evidence in favor of which can no longer be doubted by, I venture to affirm, any rational man."

The writer of the foregoing paragraph has overlooked much that would interest him in the medical journals of the last five years. Not to speak of the German and French reports upon the subject, he will find that many attempts have been made in the United States to break down the barriers that are in the way of the general use of the Brand treatment. Are the writings of Baruch, Sihler, Peabody, Thompson, Wilkins, and others on this side of the Atlantic, who have reported cases and detailed the method, wholly unknown to him? Is our work in the German Hospital in Philadelphia since the beginning of 1890, the subject of repeated articles in the journals, no effort to "popularize the principle" and remove prejudice? We have now reported 300 cases; Redmond's paper is based upon four observations.

Guaiacol Topically for Erysipelas.—Bard (*Le Mercredi Médical*, 1893, No. 42, p. 510) reports successful results from the topical application of guaiacol by means of a brush in the treatment of five cases of erysipelas. From fifteen to thirty minims of guaiacol were employed at each application, which extended for a short distance beyond the inflamed area, and was, as a rule, followed by a reduction of the temperature, continuing for several hours.

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[1] Sammlung klinischer Vorträge, Volkmann, No. 70, 1893.

[1] Therapeutic Gazette, September 15, 1893.

TWO PROSTATECTOMIES—CELIOTOMY FOR TUBERCULOUS SALPINGITIS.

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IN two recent cases of prostatectomy I have had occasion, for the control of hemorrhage, to use the tampon recommended by Dr. E. L. Keyes.[1] It has been so satisfactory that I desire to indorse it in a brief report.

CASE I.—Oliver K. H., a Norwegian, aged sixty-four years, referred by Dr. N. E. Remmen, of Chicago, had suffered from the mechanical consequences of enlarged prostate for ten years, and during the last eight years of this period had used a catheter with a moderate degree of comfort. Four months before the patient consulted me he broke off five inches of an old No. 12 soft-rubber catheter in the bladder and prostatic urethra. He had retained the catheter after it had become old and brittle, because its stiffness, increasing with age, had facilitated its introduction. For two days the fragment of catheter remained in this position, allowing the urine to flow continuously. It then slipped back into the bladder, where, strange to say, it caused but little trouble. This was probably due to the fact that the patient had become accustomed to the unpleasant symptoms caused by vesical irritation. At the time the man consulted me the urine was being drawn about every three hours. There was a fair amount of vesical contractility. The urine contained a slight amount of pus, but no casts. Rectal examination revealed a moderate enlargement of the prostate gland. The patient's general condition was good. There was but a small amount of atheroma, and symptoms of toxemia were absent.

Supra-pubic cystotomy readily enabled me to remove the foreign body, which is represented in Fig. 1, and to palpate the enlarged prostate. The obstruction was found to depend upon the presence of a projecting mass the size of a hen's egg, acting as a ball-valve at the entrance of the urethra. This was removed by the scissors and forceps, and a channel, giving free communication between the retro-prostatic vesical pouch and the entrance of the urethra, was dug out in the same way. This part of the operation was performed as quickly as possible; still the hemorrhage from the scissor-cuts, rendered necessary by the toughness of the gland-tissue, was considerable. While hemostatic irrigation of the bladder with hot water was being performed, a tampon was made by tying a strong suture of silk to the middle of a pad of layers of iodoformized gauze four inches square. A steel sound was then passed by the urethra, and the free end of the suture fastened to its beak as it presented in the wound. Upon withdrawing the sound, traction upon the suture caused the tampon to descend, middle first, into the wound, and the finger quickly guided it to the vesical neck. The free end of the thread was fastened to a small roll of iodoform gauze at the meatus. The hemorrhage, after having almost entirely ceased during irrigation, had begun again. Traction upon the tampon now controlled it completely. Upon recovering consciousness the patient complained of no pain, the urine drained freely through the incision, and after thirty-six hours the tampon was withdrawn with forceps, with but little discomfort. The patient's recovery was uneventful.

FIG. 1.

CASE II.—Mr. W., aged sixty-seven years, began in April, 1893, to use the catheter on account of a prostatic enlargement, which had begun to produce obstruction two years before. In spite of daily irrigation of the bladder, catheterism soon failed to relieve the vesical irritability, although the instrument was passed every hour and a half. The patient, exhausted from worry and loss of sleep, begged for operative relief, and was referred to me by Dr.

[1] N. Y. Medical Record, September, 1892.

Reuben Peterson, of Grand Rapids, Mich. Examination revealed a rather large prostate; the residual urine was six ounces; the expulsive force was small; there were no renal casts; the general condition was good. Upon operating, the supra-pubic opening into the bladder revealed a napkin-ring-like mass of prostatic tissue projecting well into the bladder, with the urethral opening in its center. It was evident that the urine could only be passed through such an opening by the exercise of great force. In order to expose the prostatic tissue more freely to palpation, and to facilitate hemostasis and subsequent drainage, a perineal incision was made. The ring of prostatic tissue was incised with scissors in front of the urethra, and the finger was then introduced into this opening through the ventral wound. The new tissue in this case was deposited in nodules varying in size from that of a pea to that of a pigeon's egg. They were enucleated with the finger-tip after some difficulty, three hundred and ten grains of tissue being removed. A "low-level" channel was thus produced. Hemorrhage was not so severe in this as in the preceding case, because it was not necessary to use the scissors so freely. The Keyes tampon was applied, however, in the same manner, except that the suture was brought out through the perineum instead of through the penis. The suture was held in place by wrapping it around a roll of iodoform-gauze, to which it was clamped by a small hemostatic forceps. The tampon was removed after thirty-six hours. The patient made a satisfactory recovery.

The precision and rapidity with which hemorrhage is controlled after prostatectomy by this simple measure encourages the hope that we shall now be able to reduce our death-rate by this and other means to a point so low that we shall be justified in materially extending the indications of the procedure.

Case III. *Tuberculosis of the Fallopian tubes and retro-peritoneal lymph-glands; partial obstruction of the rectum; celiotomy; definitive recovery.*—Mrs. S., twenty-six years of age, a German, has had three children; since the birth of the last, in November, 1892, she has lost her health. For several months her weight has been decreasing; her color is tawny and her appetite poor. Menstruation has been irregular and painful, and she has had leukorrhea. Obstinate constipation was not overcome by the stronger cathartics and the bowels only moved at intervals of about a week, the patient meanwhile suffering intensely from tormina, the vermicular intestinal movements being visible through the abdominal walls.

Examination by the vagina disclosed slight lacerations of the perineum and cervix, as well as tubal distention, upon the right side the size of a hen's egg; upon the left side, that of a walnut.

In preparation for celiotomy one-eighth-minim doses of croton oil were given three times before satisfactory evacuations were effected.

Abdominal section enabled me to remove the tubes in the usual way, although they were matted down tightly to the surrounding pelvic viscera, producing in that way the constriction of the lower bowel that caused the obstipation. Behind the peritoneum, however, the lymphatic glands were enlarged to the size of walnuts in a chain extending from the small pelvis to the first lumbar vertebra. During the first few days there was much gaseous distention of the bowels, and laxatives gave the most meager results. On the twelfth day, however, several passages occurred spontaneously, one of which was enormous and contained fecal masses that were evidently very old. Small doses of cascara sagrada were afterward given, with perfect success, to move the bowels.

The temperature, which was elevated before the operation, fluctuated afterward in the irregular manner common in tuberculosis, between 98.8° and

Fig. 2.

Tuberculosis of Fallopian tube. Transverse section. ×24. Walls of tube much thickened.

a. Infiltrated peritoneum.
b. Defect of peritoneum.
c. Bloodvessels containing blood.
d. Small tubercles with giant-cells.
e. Areas of caseation.
f. Mucous membrane.
g. Defect of mucous membrane.
h. Large tubercle with giant-cells—beginning caseation.

101.8°. After the fourteenth day the temperature remained normal and all the symptoms improved. The patient has recovered her health in every way, and I believe the tuberculosis of the retro-peritoneal lymphatic glands is now in a stationary condition equivalent to recovery. A section of one of the tubes (which, of course, contained tuberculous detritus) is pictured in Fig. 2.

This case is worthy of note, because of (1) the

pathologic nature of the tubal inflammation; (2) the obstipation due to pressure, with recovery after removal of the diseased uterine appendages; (3) the apparently permanent recovery of the very extensive tuberculous lymphadenitis after extirpation of the primary focus.

THE GENERAL PRINCIPLES UNDERLYING ALL GOOD METHODS OF INFANT-FEEDING.[1]

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JUST as the highest aim of medical art should be directed to the province of preventive medicine, so the highest and most noble branch of preventive medicine should consist in the study of the best means and the most practical methods for starting young human beings on their life-race; for preserving them from the perils that surround the early hours of existence; for giving them strength and vigor to resist the attacks that, greater and more dangerous in inverse proportion to their age, must inevitably be made on their vitality. The preventive medicine of early life is preëminently the intelligent management of the nutriment that enables young human beings to breathe and grow and live. In fact, it is proper or improper nutriment that makes or mars the perfection of the coming race.

Infant-feeding, then, is the subject of all others that should interest and incite to research all who are working in the preventive medicine of early life. The subject is a great one, and is worthy of the attention of the greatest minds of the age; worthy of the discussion of the leaders in medical thought of our Western Continent.

The responsibility of introducing such a serious question before such an assemblage of advanced medical thought is a grave one. It should be taken up carefully, and it must be dealt with broadly. For the present we must acknowledge, and in fact it is true, that in the status of infant-feeding, as it has existed until within the last few years the average human breast-fed infant is more likely to live, the other factors of the life-problem being equal, than the infant fed by any other method. But we must remember that the latest scientific work on this subject shows very clearly that it is not breast-milk as a whole that is preëminently good, but that there are definite, known qualities inherent in the different elements of the breast-milk that make it the best known food. It is our province as scientific workers in this most important branch of practical medicine year by year to elucidate and make use of these elements, once covered by a somewhat mysterious veil, but now rapidly becoming laid bare by the searchlight of patient and laborious investigation.

A great advance has been made in our knowledge as to what we are to copy from human breast-milk and what we must achieve in preparing a substitute. The very essence of this practical information that we have gradually acquired lies in the discovery that there is no one perfect nutriment for young human beings as a whole, but that it is the changes in the various elements of the breast-milk that satisfy the demands of the individual, and thus in time suit the many to such a degree that this protean food has erroneously come to be looked upon as one especial unchanging nutriment.

To thoroughly understand and successfully solve the feeding-problem of the early months of life a knowledge of the changes that from many causes take place in the mammary gland must be clearly kept in view. Again, the methods of modifying the milk in the human mammary gland, however limited in scope they may be, should be practically investigated and carefully adapted to the individual, according to its age and size and general physical condition. The mammary gland in its perfected state, uninfluenced by disease or nervous disturbance or by the improper living of its owner, is a beautifully adapted piece of mechanism constructed for the elaboration and secretion of an animal food. When in equilibrium it represents the highest type of a living machine adapted for a special purpose, both mechanically, chemically, physiologically, and economically. When from any cause this sensitive machinery is thrown out of equilibrium its product is at once changed, sometimes but slightly, but at other times to such an extent that the most disastrous consequences may follow when it is imbibed.

To state, then, concisely what I have already referred to in studying the form of nutriment suitable for the early months of life, we should manifestly be guided by what Nature has taught us throughout many ages.

The researches of science, especially in the subject of infant-feeding, are indeed wisely directed to learning to read the truths that Nature presents to us. Great progress has been made in reading these truths; what we are at present endeavoring to do is to copy them.

The constituents of the nutriment that Nature has provided for the offspring of all mammals is essentially animal and never vegetable. Human beings, therefore, in the first twelve months of life are carnivora. It is, therefore, evident that an animal food entirely and always free from any vegetable constituents has been proved to be the nutriment on which the greatest number of human beings live and the least number die.

When good breast-milk, or rather one that is

[1] Address at the opening of the third session of the Section for Diseases of Children of the Pan-American Medical Congress at Washington, D. C., September, 1893.

fairly adapted to the individual infant, cannot be obtained, or, if obtained, cannot be regulated by modification, it is desirable to combine the elements that good breast-milk represents. For perfecting this, which may best be called substitute feeding, we must have a material that, while as closely as possible approaching the analyses of good breast-milk, is also easily accessible.

There is no mammal whose milk-production corresponds sufficiently to human milk to render a direct substitution safe or wise. If, therefore, milk is used, the problem demands for its solution a modified milk. The mammal whose product representing a carnivorous food has been proved from the earliest ages to best satisfy this demand is the cow. Certain breeds of cows are better adapted than others to produce milk that may be used for imitating human milk. For the use of this continent these breeds are the Durham, Ayrshire, Holstein-Friesian, American grades, and common natives.

The infant at the breast receives for its nutriment a fluid that is fresh, sterile, neutral, or faintly alkaline, has a temperature of from 98° to 100° F., and is furnished in an amount proportionate to its age and size. It is this fluid that we should copy in every possible detail when we undertake to prepare a substitute food. We should also consider as foreign matter, to be rigidly avoided, any element that we know is not to be found in the fluid that we are copying. Thus and thus only can we finally arrive at the proper solution of this intricate feeding-problem.

It would seem hardly necessary to suggest that the proper authority for establishing rules for substitute-feeding should emanate from the medical profession and not from non-medical capitalists. Yet, when we study the history of substitute feeding as it is presented all over the world, the part that the family physician plays, in comparison with the numberless patent and proprietary foods administered by the nurses, is a humiliating one, and one that should no longer be tolerated.

I would plead in the name of common humanity, as well as in the name of the intelligence and scientific reputation of our profession, that this representative body of American physicians should, in its endeavor to advance the general subject of infant-feeding, record itself as opposed to the use of patent or proprietary foods of every description. If we are abreast of the times, if we will but recognize and do justice to the work that has lately emanated from our own profession, we surely will not hesitate to boldly relegate to oblivion the statements of the food-proprietors, which on box and can, on bottle and on printed circular, attempt to stem the slow but inevitably progressing wave of scientific investigation.

It may be well to bear in mind that the attempts which in the past have been made to manufacture cheap foods have been markedly failures. We must first, regardless of expense, learn by modification to produce a perfected substitute food before we should endanger the success of our undertaking by allowing the mercantile side of the question to cripple us in the use of costly methods that we know to be the best. We should, in fact, remember that the nutriment which we are endeavoring to copy, far from being a cheap product, is on the contrary a very expensive one.

It is the knowledge of how to determine the best combinations of certain elements, and the best methods of accomplishing these combinations, that in the last year or two has especially claimed our attention and in which we have met with signal success.

There is no doubt but that one of the most important questions connected with the preparation of a substitute food is the proper control of the primal milk-supply. What that control shall be and how it shall absolutely be kept in the hands of those who by education and unselfish interest are most fitted to use their power wisely, is a matter worthy of your deepest thought.

The State control, as represented in Denmark, is indeed a brilliant example of what can be accomplished in this direction. Whether a similar method would prove to be the best for us to adopt has not as yet by any means been proved. The political clouds that continually obscure the highest scientific aspirations on this continent make it probable that, for the present at least, the primal milk-supply can best be perfected by individual enterprise and enthusiasm.

Finally, I would call your attention and consideration to the great capacity of different infantile digestions for assimilating a variety of proportions of the same nutritive elements; and hence, when introducing new methods for preparing a substitute food, the necessity for providing for many prescription-possibilities.

The latest researches on human breast-milk show that the albumin of the milk is not merely an exudation from the lymph-vessels supplying the mammary gland, but that it is actually modified in the breast.

We thus see that the mammary gland, besides being an elaborator and a store-house for infant nutriment, is also a modifier.

Following, therefore, Nature again closely, we learn that the precise modification of an absolutely pure and fresh primal milk-supply is the vital principle that at present should underlie our efforts to perfect substitute feeding, and I trust that those who will to-day take part in the discussion of this very

important subject will especially enlighten us on two matters of extreme interest:

First, what is the best method of obtaining a stable and perfect primal milk-supply?

Second, when this supply is obtained, how shall it best be modified?

A COMMON ETIOLOGY IN THE INFLAMMATROY DISEASES OF THE RESPIRATORY TRACT.

BY EDWIN J. KUH, M.D.,
OF CHICAGO, ILL.

WHILE the literature of recent years shows sporadic instances in which writers emphasize the infectious nature of those inflammatory troubles of the nose, throat, and chest commonly ascribed to "taking cold," I am aware that it has not become part and parcel of the medical consciousness that these diseases are "caught" in a different manner than tradition and our grandmothers would have us believe. Self-observation (see "Etiology and Cure of Asthma" in the *Journal of the American Medical Association*, January 29, 1887) and observation of others have taught me that all the muffling and clothing in the world would not prevent those susceptible to "colds" from "catching" them, if a protection of the body-surface were considered a sufficient prophylaxis against these affections. It cannot of course be doubted that when chronic affections of the respiratory tract *preëxist*, exposure to rapid changes in temperature *per se* can aggravate existing conditions. But the primary affection, it seems, is always inhaled. Such circulatory changes as must occur in the respiratory tract when the vessels of the skin contract through "taking cold" are evidently a predisposing factor to infection; but that is probably all.

We all know how immune we become against "colds" in the severest climates and in spite of most careless exposure, where the air is pure; and we also recognize how susceptible we again become when we return to our city home.

With that cerebral squint, which O. W. Holmes has been pleased to dwell upon, we attempt to explain affections without exposure, with the words, "I must have taken cold."

The surgeon knows that pus implies infection, but the throat-specialist and the family doctor have not yet yielded to the inevitable and logical analogy in their fields of work. Wherever there is pus there has likely been infection; there is no reason why this proposition should not hold good for the mucous membranes as well as in other tissues. A typical acute coryza will, as a rule, run its course as unalterably as a typhoid fever. The same, generally speaking, may be claimed for the acute pharyngeal, laryngeal, and bronchial affections.

In private conversation it has been frequently retorted: "The cold is primary, the infection may follow as a complication." This would be an argument, if the infection did not constantly occur without exposure to cold. The history of the development of our knowledge in regard to pneumonia should silence that objection.

Although this article is not bolstered with bacteriologic tests, it seems a safe and necessery conclusion from the point of analogy and observation to assume that the inflammatory causes of coryza, amygdalitis, laryngitis, tracheitis, and bronchitis are inhaled. The omnipresence of organic dust, laden with bacteria, is the simplest, most constant and most forceful agent in the causation of those inflammations. No explanation for the appalling mortality from pneumonia in our large cities, frequently competing in numbers with that from tuberculosis, offers so perfect a solution as the theory of the dust-origin of that disease. The refuse from those same streets and alleys from which we turn in disgust is blown into our fashionable thoroughfares and inhaled. The utter disregard of these conditions makes our public buildings (court-houses, schools, theaters, railway stations, office-buildings, large retail stores, etc.) foci of infection. It is fairly gambling with a child's health and life to send it to school where provisions for pure air (in the sense of asepticity) are an unheard-of and at present unrealizable postulate.

The publication of the discovery of the tubercle-bacillus is entering upon its twelfth anniversary; and yet how slowly has this most positive knowledge in medicine stimulated us as a body of professional men to common and legislative prophylaxis. We are, it seems, too much interested in individuals and not enough in communities.

The remedy against dust-borne diseases of the respiratory organs would consist in pavements that do not easily pulverize, in honest street-cleaning, and in sufficient sprinkling, in rich and poor quarters, to prevent the raising of dust.

CLINICAL LECTURE.

INGROWING TOE-NAIL AND OTHER DISEASES OF THE NAILS.

Clinical Lecture delivered at Buffalo General Hospital.

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY, UNIVERSITY OF BUFFALO.

THIS patient, a young woman, suffers from well-marked ingrowing toe-nail in the great toe of each foot. The condition is almost always the result of bad habits, either past or present, in footwear. I have never seen a case in a person who has habitually gone barefoot, and the condition is practically unknown in those races that do not wear tight-fitting shoes. Moreover, ingrow-

ing nails are not found on the fingers. The ingrowing nail, therefore, is an indication that the feet have been abused and tortured. The majority of women's shoes, whether cheap or expensive, are too tight across the phalanges and exert too much pressure over the metatarso-phalangeal joints. Women's shoes especially are tight at the toes and high-heeled, so that the weight of the body drives the feet forward at each step and the toes are crowded into the shape of a wedge. The soft parts are thus pressed against the edges of the nails; they become tender from the irritation, and, after a time, ulceration may result. The nail, as sharp as many a pocket-knife blade, presses constantly into the granulations of the irritable ulcer and causes exquisite pain, which may even make walking impossible. A workingman or woman cannot afford the time to pet the feet and give up to such an incapacity, and so this girl has entered the hospital for radical relief from this lesion, which is trivial in size but severe in its consequences.

In some cases all that is necessary is to correct the footwear. It has been suggested to pack underneath the edge of the nail a little cotton with a small spatula—ladies use that universal instrument, a hairpin, for this maneuver. The cotton protects the granulations from the edge of the nail, but it has to be changed twice a day, and in cases of any severity it seldom affords permanent relief. Another method is to burn down the granulations with caustics. This mitigates the irritability of the ulcer but requires repetition every few days, and it is possible that the continued stimulation of the ulcer with caustics might bring about a malignant degeneration. Again, it has been advised to scrape the nail very thin with a piece of glass, so that it may yield in the middle and not exert so much pressure on the side where the pain is produced. Of course, the use of local anesthetics, or even of hot water, will afford some relief; but after a person has wasted scores of hours in palliative measures and found that the result is only temporary, she becomes desperate and is willing to undergo almost anything for the sake of obtaining radical relief.

One of the radical operations was suggested by a charlatan, a corn-doctor, and it has proved efficacious in a great many instances. It consists in slicing off the affected side of the toe, passing a sharp bistoury alongside the bone, and removing considerable healthy tissue along with the ulcer. For the time being a larger ulcer results, but, as it heals, the cicatricial contraction draws the soft parts away from the nail. This method has much to recommend it, and, if one does not want to lose the toe-nail, it is the only one that is effective. But it is not so radical as the removal of the offending substance, the nail itself, and the second radical operation consists, first, in a longitudinal division of the nail, and, secondly, in the avulsion of the two halves with a suitable pair of forceps. It is this latter operation that will be followed in the present case. This patient illustrates a rarity in connection with ingrowing nail, for she has one on the third toe of the left foot as well as on both great toes. Usually, ingrowing nail is confined to the great toes.

Even so simple an operation must be performed properly, or it will not be successful. The nail grows from the epiblastic layer of the developing embryo, and is simply epithelium that has become cornified, like the horns and hoofs of animals. We must remove the cells from which it is regenerated or it will be, in some measure, reproduced. It is not, therefore, sufficient to pull the nail out; we must go down to the matrix and clean it out.

The nail is split by passing a knife-blade or one blade of a pair of scissors under it and splitting it down the middle. It is separated from the matrix a little way on each side of the split, each half seized with a strong pair of forceps and torn out by a rolling motion of the forceps. In the present instance, there being three nails to remove, the patient has been anesthetized with ether, but the operation, being so short, although painful, does not usually require a general anesthetic and can be done under cocain; or, if a dentist's office is near by, you can take the patient there and give nitrous oxid. After the avulsion of the nail, the granulating surface of the ulcer is cauterized and the matrix is scraped with a sharp spoon, or touched with nitric acid, to remove all imperceptible epithelial elements from which the nail might grow. The wounds are dressed antiseptically in the usual manner.

There are other diseases of the nails which may involve any phalanges of either hand or foot. There is a condition of unusual growth, which may be called hypertrophy of the nail. This does not apply to a nail that has merely grown to an unusual length, for that is due to its normal growth and would occur in every case if it were not cut off or worn off. The hypertrophied nail is thick and flares out in various irregular shapes. This you will see more frequently in elderly people than in young persons. Sometimes the nail bunches upward into a pyramid a centimeter thick in the middle. Ordinarily, hypertrophy of the nails occurs to moderate extent in old people, and is not serious. When, however, the nail is covered by a shoe, it may catch in the lining and be so constantly disturbed in its matrix as to produce an irritable ulcer beneath. It is then necessary to remove it in order to effect a cure. Sometimes the nail is so loose as to require only to be picked off.

In certain nervous diseases, irregular growth of the nails is common. You may remember the so-called ossified man who was on exhibition in this city and elsewhere. His nails were long and had grown in loose spirals, but they were also irregular in thickness and presented numerous ridges.

There are also inflammatory changes about the nails known collectively as onychia. This condition is due to irritation from chemicals, to the specific poison of syphilis or tuberculosis, or to the habit of biting and tearing the nails. Children are especially prone to this habit and may keep up chronic ulcers about the matrices. It is not strange that such an ulcer may by infection secondarily become tuberculous or syphilitic. Tuberculous children, by auto-inoculation, develop what has been called "scrofulous" onychia. Syphilitic onychia occurs either in the tertiary stage of the acquired disease or in hereditary syphilis. In children, onychia is usually attended with more or less clubbing and enlargement of the fingers on account of hyperplasia of the fibrous tissues. We find a mild form of onychia in many people whose fingers are constantly in dye-stuffs, brine or similar irritating chemic solutions.

Paronychia is mentioned in text-books under the same caption as onychia. It consists in a cellulitis of the

fingers and usually of the terminal phalanges. Inflammation of the cellular tissue about the tendon sheaths is part of the same process; it may spread to the periosteum, and then it amounts practically to a felon.

The specific forms of these lesions call for specific treatment, both local and constitutional. The other forms require, first, removal of the cause, then antiseptic and palliative applications; or, at times, free incision down to the bone and perhaps the employment of a small curet or strong caustics, after which the treatment becomes very simple.

CLINICAL MEMORANDA.

THREE CASES OF LEFT-SIDED APPENDICITIS.

BY GEORGE RYERSON FOWLER, M.D.,
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THE usual location of the caput cecum coli is in the right iliac region, lying upon the psoas magnus muscle, its most dependent point or apex projecting just beyond the inner edge of that muscle. This corresponds, externally, to a point slightly to the inner side of the middle of Poupart's ligament.

Occasionally the cecum will be found external to the psoas, and lying upon the iliacus muscle in the right iliac fossa; or the bulk of the caput may lie upon the latter muscle, while the apex rests upon the psoas. Again, the cecum may hang over the pelvic brim, entirely clear of these structures, or be lodged within the cavity of the true pelvis. After the second month of intra-uterine life the cecum gradually recedes from the neighborhood of the umbilicus, which is its original position, and finally becomes fixed in the right iliac region. To speak of the cecum as occupying the right iliac fossa is scarcely correct in the majority of instances.

Should the fetal type persist, there will be non-descent of the cecum. This will result in a corresponding abnormal situation of the appendix vermiformis ceci, the latter even lying to the left of the median line. In a dissection of a sixteen-year-old boy, Lenander observed the cecum, together with an appendix fifteen cm. long, lying against the spleen in the left hypochondriac region.[1]

The following three cases of abnormally placed, or non-descent of the cecum, with corresponding mal-position of the appendix, have come under my observation. In all three appendicitis occurred, and was not recognized, because of the presence of the abnormality. They are among one hundred and forty cases of appendicitis upon which I have operated during the time covered by these observations.

CASE I.—M. F. N., thirty-five years of age, was suddenly attacked, on the night of December 12, 1890, with colicky pains, which had subsided upon the administration of some domestic remedy that contained opium. The pains were generally distributed over the abdominal region, and were finally referred particularly to the epigastrium. Nausea and vomiting had followed the onset of the pain. The woman had recently lost a friend with appendicitis, and had been informed that if a surgeon had been summoned and an operation performed, her life might have been saved.

The patient's pulse was 80, and the temperature 100° F. She expressed herself as feeling much better than before the administration of the opiate. There was a somewhat diffused and not very acute tenderness at the outer border of the *left* rectus muscle, on a line with the umbilicus. The case was regarded as one of intestinal colic, and treated with a small dose of morphin hypodermatically. I left her with instructions to summon a physician in case of a recurrence of the pain.

Forty-eight hours subsequently I was summoned in great haste, and found the patient in profound collapse. With the exception of pain in the *left* hypochondrium, she had remained quite comfortable until a few hours before, when, in rising to urinate, a sudden accession of pain to the *left* of the umbilicus had occurred, followed very shortly afterward by intense pains, which had rapidly become general. Her pulse became very rapid and weak, and she died, without rallying, seven hours after the relapse of the symptoms.

The autopsy, conducted by Prof. Van Cott, revealed a perforated left-sided appendix. The caput coli was found, attached by a very short meso-colon lying almost directly upon the promontory of the sacrum, with the appendix curled upward and outward beneath the left rectus muscle. The perforation occupied a space one inch long, about midway between its tip and its base of attachment to the cecum. The appendix was three inches in length. Only slight adhesions were present at the site of the rupture, the edges of the latter presenting a ragged appearance. The remainder of the appendix was swollen, infiltrated, and enlarged. No foreign body was present.

Considerable sero-purulent fluid, and some fecal matter, occupied the peritoneal cavity. Septic peritonitis was present.

CASE II.—A. M. M., nineteen years of age, was admitted to St. Mary's Hospital on June 29, 1891, with the following history: Seven days before admission he suddenly developed severe abdominal pain, followed by vomiting. The pain was at no time localized. A tumor had been made out by the family physician, beneath the *left* rectus muscle, two days prior to admission. This was thought to be due to fecal impaction, and cathartics were administered. The tumor disappeared, although the bowels refused to respond to the cathartic medicine which had been administered. The pain, however became much more violent, and the patient became greatly prostrated.

He was prepared for operation immediately upon his admission to the hospital. The median abdominal incision was made. Upon reaching the peritoneal cavity a large amount of sero-purulent fluid was found free in the peritoneal cavity, besides three separate collections of the same sero-purulent matter, partly walled off by adhesions. A violent septic peritonitis was under way. The caput coli lay immediately behind the umbilicus, and the cecum was turned to the left, the appendix lying behind the left rectus muscle, just below the level of the umbilicus. The patient's condition did not admit of an attempt to remove the appendix.

Death took place shortly following the operation, from shock and the preëxisting septic peritonitis. The autopsy showed a gangrenous appendix, which had perforated, in addition to the conditions already described. No foreign body was found.

[1] Sammlung klinischer Vorträge, August, 1893, No. 75.

CASE III.—On September 12, 1892, I was requested by Dr. J. H. Burge to see J. B., a male, sixteen years old. He had been absent from home, without his parents' consent, for more than a week, and had been sleeping in a milkman's stable. Upon the day preceding my visit he had come home, suffering from severe abdominal pain, which had suddenly set in upon the previous day. Nausea and vomiting had followed the pain. The following condition was noted upon the occasion of my visit: The abdomen was considerably distended, with fulness rather more marked upon the *left* side. There was tenderness within an area of about three and a half inches in diameter, beneath the left rectus muscle, commencing at the umbilicus and extending directly downward. Marked dulness on percussion was present in the left iliac region and flank. Sensibility was particularly acute in the left lumbar region, and extending to the lower border of the ribs posteriorly. The temperature was 104° F., pulse 124.

A diagnosis of left-sided appendicitis was made, and the patient was removed to the Methodist Episcopal Hospital for operation. On the afternoon of the same day a median celiotomy was performed. Upon opening the abdominal cavity I encountered a large amount of seropurulent fluid free in the peritoneum. A large abscess-cavity was found to the left of the median line, occupying the locality of the dulness referred to. After thoroughly packing the surroundings with sterilized gauze, thus isolating the general peritoneal cavity, the pus was evacuated. The finger-tip could be passed through an opening a half-inch in diameter, which led directly to the layer of connective tissue behind the peritoneum. The latter appeared to be dissected up in all directions. About fourteen ounces of pus were obtained from the two cavities. The walls of the abdominal portion of the abscess were made up of masses of adhesions, which were not attached anteriorly. The caput coli and the cecum were displaced from their normal position in the right iliac region, being curved to the left and upward toward the umbilicus, and lost in the mass of adhesions which made up the abscess walls.

As thorough a disinfection of the pus-cavities as possible was made, the communication between the two being enlarged to facilitate irrigation and packing. Both cavities were tamponed loosely with sterilized zinc oxid gauze, the ends of which were led out of the abdominal opening. The abdominal wound was only partially sutured.

The patient rallied from the operation, but sank and died on the third day from a continuance of the septic conditions which existed prior to the operation.

The autopsy revealed a gangrenous and perforated appendix, with its caput coli situated to the left of the median line, and, immediately beneath the mass of adhesions which had also formed, the wall of the large abscess-cavity. This communicated, in its turn, with a cavity in the post-peritoneal connective tissue, extending in an upward direction for about eight inches above the point of communication with the first. The ascending colon and the cecum were situated to the left of the median line, and on a level with the umbilicus.

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TWO COMPLICATED LABORS; DELIVERIES BY VERSION AND BY CESAREAN SECTION; RECOVERIES.

BY GUY HINSDALE, M.D.,

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CASE I. *Arm and shoulder presentation; version.*—The patient's fifth pregnancy expired April 20, 1881. The fourth pregnancy had ended in a breech-presentation; the previous labors had been normal. On being called to this patient an examination was made at once and the right arm and funis were found presenting, the waters having previously ruptured. Not succeeding in restoring the arm, I called on Dr. E. H. Bell, who also was unable to restore the arm but succeeded in performing podalic version. At first the right foot was grasped and made fast by a fillet. All endeavors to grasp the left leg were unsuccessful. Traction was made, and with great difficulty the hips and left leg were brought down. After the body had been born, the head still remained transverse, and the arms extended at either side of the head. No efforts on the part of either of us succeeded in moving the child. The arms were finally forcibly brought down, sustaining a fracture on the left side of the acromion, and on the right side of the humerus at the middle. Traction was then made, and the head rotating antero-posteriorly, the child was delivered, but was not living, owing to pressure on the cord. The patient made a good recovery.

CASE II. *Labor obstructed by uterine fibroids; Cesarean section (Porro operation) by Dr. Hirst; recovery.*—The patient was a primipara, aged twenty-six, of spare habit. Three weeks before delivery she apparently fell into labor, but after several hours the pains subsided. On October 24, 1893, I was called and found regular labor-pains present, but the os was high up and pointing far over to the left side. The fetal heart was heard most distinctly on the right side and below the umbilicus. Owing to the irregular shape of the uterus, and the oblique displacement of the os, twin pregnancy was at first suspected, but only one fetal heart-beat could be heard. Ineffectual pains continued for the next thirty-six hours, when I determined to etherize the patient and ascertain the cause of the difficulty. As soon as she was under ether it was evident that a large fibroid attached to the neck of the uterus was interfering with dilatation of the cervix and the descent of the head. On passing the forefinger through the os, a brow-presentation was recognized, the nose, chin, and eyes being distinctly felt. Simpson's forceps and the axis-traction forceps were applied to the head, but delivery was impossible, owing to the head lodging against the symphysis pubis. Efforts were made by Dr. F. S. Pearce and Dr. J. B. H. Gittings, whose assistance I secured, to deliver by version, but they were also unsuccessful. I then decided to call in Prof. Barton C. Hirst to perform Cesarean section. We deemed it best to remove the patient to the Hospital of the University of Pennsylvania, three squares distant. After giving her three hours' rest, Dr. Hirst operated in the presence of the class.

The patient having been prepared in the usual manner, the abdominal cavity was opened with scissors, the uterus lifted up and grasped by an assistant who held it

tightly by the neck. The placenta lying posteriorly, the uterus was opened by scissors in the middle line and the child extracted, the cord severed, and vigorous efforts were made by a third assistant to resuscitate the child. Although fetal heart-sounds were heard a short time before operation, the child did not live.

The neck of the uterus was then transfixed in two directions, and a strong rubber ligature applied. A large pedunculated fibroid was found attached to the uterine neck, lying in the pelvis, and another near the fundus. These were nearly as large as the fetal head. The lower tumor was extricated with considerable difficulty. The uterus and attached fibroids were then severed above the transfixing pins.

The stump was treated by the extra-peritoneal method. The patient did well, the temperature reaching normal in less than one week, and she is now nearly ready to leave the hospital.

UNIQUE CASE OF TRAUMATIC TETANUS, WITH GENERALIZATION AND RECOVERY.[1]

BY J. G. ORTON, M.D.,
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IN reporting the following case of tetanus, I present it not only as a marked illustration of the pathologic reflex state of the disease, having a peripheral irritation for its immediate point of origin, an exaggerated functional activity of the spinal centers for its condition, and muscular contractions for its effects; but also as a remarkable instance of the power of endurance of the human body under long-continued muscular contortions, accompanied by painful paroxysms of spasm involving such important parts as the diaphragm and the muscles of the larynx, and yet followed by complete recovery.

The patient, I. D., nine years of age, of slight build, light-brown hair, blue eyes, and fair complexion, received a contused wound of the left forefinger, at the distal end, which at the time was not thought of sufficiently serious character to call for surgical care.

On the fifth day after the accident the boy was seized with symptoms of trismus, at which time I was called to attend him. The jaws could only be partially opened. The injured finger presented the usual appearance of a neglected contused wound, unhealthy pus surrounding a denuded and dead portion of bone. I removed the diseased portions, giving the parts suitable antiseptic dressing, and the wound rapidly took on a healthy character and in due time fully healed.

On the second day after seeing the boy the muscles of the face became involved, giving the characteristic expression of the *risus sardonicus*. On the third day an invasion of the muscles of the pharynx took place, exhibiting the dysphagic form of tetanus. On the fourth day the extensors of the neck contracted, the lower limbs became stiff, adducted, and extended. On the fifth day, unyielding contractions of the muscles of both arms and fingers had supervened, and on the sixth day generalization was fully established. During a painful paroxysmal spasm involving the whole body, opisthotonos was produced to a remarkable degree, and remained for hours before any relaxation occurred. Besides these continued and powerful contractions of the muscles, painful paroxysms frequently supervened under the slightest external excitation, such as a jar of the bed or walking in the room. Complete intermission never occurred. The generalization was so thorough at times as to involve the integrity of the diaphragm and the muscles of the larynx, and the patient apparently ceased to breathe, becoming as one asphyxiated; finally at one time during these paroxysms there was a simulation of the act of dying, the child becoming pulseless, pale, and ghastly in the extreme. Out of this critical condition he would gradually rally, only to suffer repetitions for many days in succession. The spasms of the jaws and pharynx were for a long time so uninterrupted that he was unable to swallow even liquids, and became extremely emaciated.

The deviation of temperature did not assume any definite cycle, but ranged from 101° to 105°, the pulse from 110 to 150. No evening increase was observed, but the pulse kept quite a close parallel to that of the temperature. During the exacerbations of temperature delirium was always present; otherwise intelligence remained perfect. After generalization became fully established on the sixth day after the first symptoms of tetanus appeared, there was not a moment for a period of forty-five days in which complete relaxation of the contracted muscles occurred. When resolution commenced to take place, it was in the order in which the several parts of the body had become involved by the disease, and assured convalescence was established sixty days from the time of the accident to the finger. Complete recovery followed.

As to the line of treatment pursued in this unique case, I shall only briefly allude to it, for I am far from sanguine that the various measures resorted to, save one, had any special controlling influence over the disease. The amputation of the diseased bone and subsequent rapid healing of the parts accomplished all that could be desired in that direction, but failed to abate the course or severity of the contractions. Ergot, chloral, quinin, Indian hemp, etc., were each given a fair trial, with but, only temporary if any, effects. The excessive contortions of the body, opisthotonos, and the powerful contractions of the upper extremities were only mitigated or controlled by the application of the ice-bag along the cervical region of the spine. By this means, and this alone, was I able to allay the severity of the contractions, which many times seemed about to terminate the case in death by asphyxia during an attack of the dysphagic form of the disease. For a period of twenty days this application was frequently resorted to, and always gave quite prompt relief from impending danger to life; in fact, it was the only remedy that afforded any satisfaction in the treatment of this case.

[1] Read before the Tenth Annual Session of the New York State Medical Association, October, 1893.

MEDICAL PROGRESS.

A Large Cerebral Tumor.—CONROY (*New York Medical Journal*, 1893, vol. lviii, No. 19, p. 537) reports a remarkable case of cerebral tumor, the neoplasm almost completely displacing the entire left hemisphere and occasioning relatively insignificant symptoms. The case occurred in a boy who, at the age of fourteen years, was knocked down and kicked in the head by a horse. He was rendered unconscious for a short time, but afterward apparently recovered completely. After a little while,

however, it was observed that hearing was becoming impaired, and a year after the accident paralysis of the right arm and leg appeared. Subsequently speech became affected and the eyesight began to fail. The mother thought that for a year the head had been increasing in size. It was for the defect of vision, which had been observed for two years, that the patient, then twenty years old, came under observation. He was well and symmetrically developed and well nourished. The facial expression was rather dull; the tongue was protruded to the left. Sensation was impaired upon the entire right side of the body, in greatest degree in the leg. Motor power was almost completely lost in the right lower extremity, while the upper extremity was much weaker than the left. The left pupil was slightly larger than the right, though neither reacted to light or in accommodation. There was marked neuro-retinitis in both eyes, though in a more advanced stage in the left. Articulation was greatly impaired. In the situation of the left parietal foramen there was a depression in the skull, but no cicatrix. Pressure at this point induced pain. The child ate enormously and slept well. There had been several convulsive seizures, with loss of consciousness, but without frothing at the mouth or biting of the tongue. A diagnosis of cerebral tumor was made, but the patient was lost from observation for a time, when the question of operation was raised. The optic nerves had now become distinctly atrophied and vision was almost entirely lost. An operation was undertaken, an area of about two square inches of bone being removed in the neighborhood of the depression, which proved to be an opening into the bone. On incising the dark, bulging dura, a hard, lobulated mass, looking like brain-tissue, presented. This appeared to be so extensive that its removal was not attempted. A small piece, however, was taken for histologic examination and the wound was closed antiseptically. For twenty-four hours after the operation the patient appeared to be doing well, but on the second day the heart's action began to fail and death ensued painlessly forty-eight hours after the operation. Upon removal of the calvarium the left half of the cavity seemed to be filled with the tumor, the surface of which was lobulated and fissured. It was invested with a closely-adherent, tough, fibrous membrane, which bound it to the falx cerebri. The left hemisphere occupied the base of the skull beneath the tumor, by which it was flattened and compressed to the size and shape of the palm of a man's hand. Two additional smaller tumors were found on either side of the foramen magnum, attached to the dura of the medulla oblongata. The right cerebral hemisphere was somewhat pressed upon, but otherwise appeared normal. The main tumor weighed twenty-seven ounces. Its long diameter was eight inches, its transverse diameter three inches and a half, its vertical diameter four inches. Of the smaller tumors, the one was of the size of a plum; the other was smaller. All three tumors were of firm consistence and seemed homogeneous throughout. Upon section, they appeared to be constituted of pure fibrous tissue, with here and there a small area of fatty degeneration.

The Symptomatology of Exophthalmic Goiter.—At a recent meeting of the Medical Society of London, Maude (*British Medical Journal*, No. 1712, p. 892) called attention to some not generally recognized manifestations of exophthalmic goiter. He insisted on the constancy of some degree of thyroid enlargement, though possibly but slight and transitory. Among fifty-five cases of enlarged thyroid gland observed in a population of 3000, there were twelve more or less well-marked cases of exophthalmic goiter. A case was reported of exophthalmic goiter in the child of a myxedematous mother. Among the psychoses observed in the course of exophthalmic goiter, in addition to the usual irritability of temper, are (1) an over-sensitive notion of duty, only removed in degree from religious melancholia, with delusion of sin; (2) incoherence of idea (Russell Reynolds' "chorea of ideas"), with, in one case, ambulatory epilepsy, vertigo, tinnitus, and throbbing in the head. The tremor present is more marked in the flexors of the arms, the interossei escaping. It is almost universal and resembles the tremor induced in animals by removal of the thyroid gland; it is more uniform than the tremor of hysteria. Eclamptic convulsions may occur, having a direct relation to and being perhaps determined by, the disturbed cardiac action. Clonic spasm of the face and chorea are common concomitants. Among other bulbar symptoms is a difficulty in swallowing, resembling that encountered in myxedema, with interference with speech, like that observed in disseminated sclerosis. Facial paralysis is common and most patients display some feebleness of the seventh nerve. The ocular symptoms are believed to be due to the paresis of the temporal division of the temporo-facial nerve. In addition to general muscular weakness there is often paraplegia of one of two types: (1) One form in which the paraplegia is only an accentuation of the chronic muscular weakness under the stress of diarrhea, cardiac failure, or other causes; (2) the form in which the paraplegia is sudden in onset and akin to the so-called hysteric or functional paralysis. Astasia-abasia is frequently encountered, but possesses no special significance. There are many symptoms that point to the existence of a peripheral neuritis, and the symptoms of exophthalmic goiter are believed to be consistent with the hypothesis of a general nerve-poisoning, falling principally on the medulla. The constant presence of goiter, the connection with myxedema, and the results of operations upon the thyroid gland are thought to justify the suspicion that the thyroid gland is the source of the mischief.

A Sign of Gastric Carcinoma.—Boas (*Münchener med. Wochenschr.*, 1893, No. 43, p. 805) contends that the presence of lactic acid in the gastric contents, particularly in conjunction with a permanent absence of hydrochloric acid, and with stagnation of the gastric contents, without demonstrable dilatation, is conclusive evidence of the existence of gastric carcinoma. If a solution of lactic acid be treated with an oxidizing agent and be gently heated acetaldehyd and formic acid are set free, and the presence of the former may be demonstrated by the production of a reddish-yellow or red color in the presence of a solution of potassium iodid and mercuric chlorid. For both qualitative and quantitative purposes small quantities of concentrated sulfuric acid and manganese are added to the solution to be tested, heat applied,

and the vapor conducted into an alkaline solution of potassium iodid. If lactic acid be present a precipitate of iodoform is thrown down. As it has been found that most bread contains lactic acid, the trial-meal in these tests should consist only of flour soup without the addition of salt.

Osteomalacia in a Male.—At a recent meeting of the Vienna Medical Club, WEISSMAYER (*Internationale klinische Rundschau*, 1893, No. 43, p. 1625) reported the case of a shoemaker, fifty-two years old, previously well, who was seized, three years before coming under observation, with sharp pain in both thighs which would not yield to treatment. The pain progressively ascended to the clavicles and was so distressing as to keep the patient in bed. All of the bones were painful upon manipulation. Carcinoma, lymphadenitis, and myeloma were excluded, and a diagnosis of osteomalacia was made. Accordingly, the administration of phosforus was begun, at first in daily doses of gr. $\frac{1}{60}$; later, in doses of gr. $\frac{1}{30}$ and gr. $\frac{1}{20}$. The pains soon subsided, and in the course of a short time the patient was able to be up and about.

THERAPEUTIC NOTES.

For Ingrowing Nail.—To expedite the process of healing, following the performance of the radical operation for ingrowing toe-nail, HÜBSCHER (*Corr.-bl. f. Schw. Aerzte*, 1893, No. 20, p. 695) recommends the transplantation of healthy skin to the fresh wound. His course of procedure is as follows: Cocain is injected into the toe to be operated on and also upon the antero-external aspect of the corresponding thigh; then a compressing bandage is applied at the base of the toe, the nail divided, its two halves removed, together with the lateral and posterior portions of the ungual fold; the nasal matrix freshened; the bandage removed; hemorrhage controlled, and a layer of skin transplanted from the thigh. Finally, a dressing is applied and permitted to remain for three or four days. The wound practically heals by first intention. As a precaution an iodoform-collodion dressing should be continued for a few days longer.

Poisoning by Cardol.—WHITE (*Boston Medical and Surgical Journal*, vol. cxxix, No. 18, p. 440) has reported the case of a man employed in a vanilla commission establishment, who presented himself with a puffy face and various forms of inflammatory lesions, papules, general redness, and a few vesicles upon one wrist and forearm. It is not believed that the symptoms resulted from intoxication from vanilla, but with an oil obtained from the rind of the cashew nut, called cardol, and employed for the purpose of giving a black color to vanilla beans of inferior quality.

Ipecac for Hematemesis.—BURLAN (*Lancet*, No. 3569, p. 923) has obtained satisfactory results from the administration of large doses of ipecacuanha for the relief of hematemesis, a dram being given in a bolus with glycerin. The utility of the drug is believed to be dependent partly upon its stimulating action upon the mucous membrane of the stomach and intestines, as a result of which an increased secretion of mucus is induced, thus diverting the blood from its dangerous work, and partly upon its sedative action upon the pulse and heart-beat.

For Sciatica.—

℞.—Pulv. opii . . . . . gr. xij.
Pulv. ipecac. ver. . . . gr. xij.
Sodii salicylat. . . . . ʒjss.
Ext. cascaræ liq. . . . q. s.—M.
Ft. pil. no. xij.
S.—One or two from three to five times a day.
The Asclepiad, 2d quarter, 1893.

The Treatment of Hydrocele.—NEUMANN (*Fortschritte der Medicin*, 1893, No. 20, p. 818) has reported the successful treatment of six consecutive cases of hydrocele by the introduction of a trocar, which was fastened and permitted to remain *in situ* for two days. Thereafter local applications of a lotion of lead-water were made. The entire course of treatment covered an average period of from seven to nine days.

For Diphtheria.—

(BIANCHINI.)

℞.—Resorcin. . . . . 2.
Acid. salicylic. . . . . 3.
Glycerin. neutral. . . . . 10.
Alcohol. absolut. . . . . 20.—M.
S.—Apply with a brush or swab to the affected surface.
La Semaine Médicale, No. 60.

For the Treatment of Uterine Myomata, ROBINSON (*New York Medical Journal*, 1893, vol, lviii, No. 19, p. 536) recommends ligating the ovarian artery, with or without tubal and ovarian structure, and ligating the uterine artery, as it courses along the sides of the body of the uterus for a half or two-thirds of its length from the fundus to the cervix.

For Burns.—OSTHOFF (*Deutsche medicin. Wochenschr.*, 1893, No. 38, p. 931) recommends the application of bismuth subnitrate made up with hot water into a mass having the consistency of plaster-of-Paris, and applied to the affected surface by means of a brush. In uncomplicated cases no other dressing will be required.

For the Removal of Warts, SYMPSON (*Quarterly Medical Journal*, vol. ii, part 1, p. 57) warmly recommends the administration of small doses of arsenic. The desired result is still more speedily brought about if, with the administration of arsenic, the topical application of a salicylic colloid is conjoined.

Calcium Chlorid as a Hemostatic.—Upon the basis of personal experience, SAUNDBY (*Birmingham Medical Review*, No. 182, p. 214) recommends the employment of small doses (not exceeding six grains) of calcium chlorid every four hours in the treatment of hemorrhage or of the hemorrhagic diathesis.

As a Genito-urinary Antiseptic, LYDSTON (*Journal of Cutaneous and Genito-urinary Diseases*, No. 134, p. 451) recommends oil of eucalyptus in doses of ten minims three times a day or oftener.

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SATURDAY, NOVEMBER 25, 1893.

FURTHER COMMENTS ON FOOT-BALL.

The Medical News last week gave a few reasons why the game of foot-ball is running to dangerous extremes, and as at present played is of most pernicious influence upon the morals of the players and of the community, subversive of the true interests of education and of genuine athletics. Our article has been reproduced in a number of lay-journals, and has called out comments, congratulations, and criticisms from private correspondents, and from journalists. There is an almost universal agreement as to the diagnosis of the disease, and nearly a universal agreement as to the prognosis and treatment. The journals that habitually compromise between conscience and salability, are, to be sure, hedgers in this matter, as in all other things; those that see clearly and speak bravely in other things see clearly and speak bravely of the foot-ball evil.

So long as the present rules and practices obtain, the first effect of public discussion will be to still further conceal the seamy side of disreputable facts and customs, and to keep the public hoodwinked as to the injuries to players, much as the railroads hide from the public the results and even the existence of "smash-ups." Another result, and a good one, is suggested by the fact that some of the games of the past few days have been more "open" games, with less "bunching" and less manifest brutality, although one college-boy has been killed in a "great battle" at a Michigan college, in which much bad blood was raised and spilled.

The News will gladly work for evolution and emendation rather than revolution and extinction, if it can be shown, as some kind critics aver, that the game may be made useful to the health, mental and physical, of the players and of the community, and serviceable to the cause of education. But of this possibility we have most profound doubts.

If improvement and correction of the present evils of the game are to be hoped for, they can only come from the most resolute agreement and action on the part of college-officers. But college-officers are too often controlled by the same motives that govern rivals in commercial life. There is a danger that they are coming to think too much of attracting new students rather than of raising the standards of education and culture of the students they have. Jealousy of other institutions in the minds of teacher and student is undeniably more active than it should be.

Harper's Weekly—a journal most clear-minded and clean-handed as to social questions—calls college-authorities to a stinging and sharp account for shirking their most manifest duty. It says to the college professors:

> "There loom up, side by side with the growth of the game and the increasing interest, two evils which threaten not simply to dampen the enthusiasm but to entirely put a stop to the sport. These evils are brutal tactics on the part of the players, and drunkenness on the part of their supporters.
>
> "Some day in the near future, when a player falls never to get up again, because his opponent in the heat of the contest has struck a little harder than he intended, you will seize the opportutity to say 'No more foot-ball.' But the responsibility of that man's death will rest upon you."

The *New York Evening Post*, the journal *par excellence* of educated gentlemen, quotes entire and commends warmly the editorial of The News, and says: "College foot-ball is fast becoming a national calamity." It shows that at Harvard, where the game stands highest, at most only 100 out of 3000 students practice the game, and that about 25 "gladiators" monopolize its "beneficent effects." It further points out a manifest truth that the influence of the game is clearly to undo one of the sublimest and hardest-won products of civilization, respect for the human body as such. "As a spectacle, the game is only one degree removed from the prize-fight, and nobody participates in it or

looks on it without finding his dislike of prize-fights diminished and his respect for prize-fighters increased."

The *New York Herald* publishes the detailed accounts of twenty-six deaths occurring so far in England during this season, directly attributable to foot-ball injuries. During the season of 1891–2 the number of deaths was twenty-two, and during 1890–1 there were twenty-three deaths. During the present season in this country there have been four, probably five, deaths. The list of broken bones and other severe injuries would be simply impossible of computation and of appalling length. If this does not settle the question of "brutality," what, then, is further needed? No wonder the accident insurance companies are refusing risks of the players.

The hopelessness of remedying the brutality lies in the universally admitted and deplored fact that no human umpire is physically capable of seeing the "slugging" that may take place in such a terrific jumble, and that it is asking an impossibility of excited and passionate boys to expect them not to "slug" when they will thereby win the game and make themselves heroes.

If reform is possible, it must follow:

1. That personal violence and injury must be stopped.[1]

2. That no public matches must be allowed during term-time.[2]

3. That, the first duty and function of a college being that of mental training, this during no day dare be subordinated to the rage for games or athletics.[3]

4. The physical development of all students is to be encouraged, not the game-winning powers of a few.[1]

5. An end must be made of rowdyism, drunkenness and gambling, in connection with, or as a result of the games.[2]

Can these things be assured? If so we shall refrain from further criticism.

TWO KINDS OF EXPERTS.

THE expert in insanity is a diagnostician—nothing more or less. His function in court, as in hospital, is to make a scientific diagnosis of a case. This function cannot be enlarged without detriment to him, or curtailed without detriment to justice. His claim to respect and credence is in exact proportion to his display of knowledge and honesty. Above all things he is a professional man, with professional traditions to guide and to support him. His science is one of observation and induction—as much so on the witness-stand as in the dead-house. He is supposed to be the associate of scientists, and to display in his own career the mental processes and discipline that are the results only of conscientious application to the attainment of an ideal.

This ideal of the expert is high and difficult for vulgar men to attain. It is above the level of the zeal of the partisan, the rage for publicity, and the greed for lucre. The duty of the expert, when he gives evidence in a trial that may deprive the the prisoner of life or of liberty and reputation, is in the line of the highest public office. The judge upon the bench has not a more trying duty or a more strictly intellectual and conscientious function. RHADAMANTHUS may preside, but the symbols of law are not necessarily the symbols of knowledge.

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[1] Col. Ernst, Superintendent of the West Point Military Academy, says in his report in reference to the injuries received by cadets in the foot-ball field:

"It is doubtful, in my opinion, if the benefits derived from playing this game, which I am free to acknowledge are very considerable in some directions, are commensurate with the risks it entails to life and limb, which, according to statistics, are much greater than commonly supposed."

[2] The entire month of November is almost entirely lost so far as study is concerned, and other months are encroached upon.

[3] More than two hours every day are now spent in signal practice. In the forenoon, the hour from 10 to 11 is passed on the floor of the big exercising hall of the gymnasium. The doors are locked and the eleven lines up against imaginary opponents. The coaches criticise the way the plays are put into effect, and the whole series of signals is gone through with again and again.

The hard practice game takes from 2 until 4 in the afternoon, and it is 4.30 before the men are all sponged, rubbed down with alcohol by professional rubbers, and dressed. Supper at the training tables comes at 6 o'clock, and from 7 to 8 comes signal practice again behind sealed doors in the gymnasium. This ends the day's work for the weary band. At 10 o'clock the force of rubbers starts out, and every player is visited at his room, where, just before he tumbles into bed he is thoroughly rubbed and liniment applied to bruises and sprains.

This is the daily life of a university foot-ball man through November. He has the rest of the year in which to catch up with his studies. He does not get very deep into learning while his hair is long and the canvas jacket the sign of his calling.—*Ralph D. Paine in the New York World.*

See another account in the *New York Sun*, November 19th.

[1] Remark the monopoly of the gymnasium and of the field by the professional team.

[2] Note the regulations of the New York police and of the Yale College Faculty as regards the conduct and "celebration" of students after the Thanksgiving game.

These are preëminently in the keeping of the scientist.

This ideal of the expert is nourished first and last upon the Baconian philosophy—it is founded upon the conception of pure knowledge, based upon observation and induction. It inspires a man to ignore rumor, to despise gossip, to curse mendacity and ignorance, to rebuke presumption, and it does not permit him to associate with newspaper reporters. Above all it enables him to keep the faith, to recognize no responsibility but to truth, and no bond of fellowship outside of his own profession. Thus he has the methods of science, but he has also the reticence of priests. He does not pause upon the curbstone for whispered confidences with the public, nor does he pronounce opinions upon the cases of men whom he has never seen. This is one kind of expert.

But, unfortunately, there is another kind of expert, and occasionally he is in evidence. He gives long interviews in the newspapers, in which he delivers himself of opinions upon the mental condition of any or every criminal in the land. The cases of Cochran, who robbed the Philadelphia Mint, and of Prendergast, who killed the Mayor of Chicago, have not escaped the eternal vigilance of the newspaper expert. Their cases are diagnosticated at once by men who live hundreds, perhaps thousands, of miles from them, and who have never had the privilege of more exact knowledge of them than is to be obtained from a sensational newspaper report. We have abstained purposely from comment upon Cochran's case before trial, and we do not intend to comment in detail upon it now, although we are credibly informed that the trial will probably be ended before this writing sees print. We shall only state that we shall publish in due time an authentic medico-legal report of the case by one of the experts employed by the Government to determine the prisoner's mental condition.

Undoubtedly the newspaper interviews, in which opinions are ascribed to physicians, are not always authentic, and sometimes they do the alleged author grave injustice. These interviews, in a word, are evidences of the lax morale that pervades the modern guild of news-getters, rather than of the unbridled speech which is put in the mouth of the unfortunate, but not blameless, expert. Such an interview, among several, has recently come to our notice, in which the case of Cochran is discussed with great freedom. If it is the fiction of a reporter, as we sincerely trust it is, it is all the more appropriate for our purposes as a text, as it thus assumes in our comments a strictly impersonal part.

An alienist who had never seen Cochran was made, by an invidious reporter, to dramatize somewhat as follows. He was made to premise by saying that his opinion was founded upon "data furnished by the newspapers." He was then made, without more ado, to pronounce Cochran's condition to be that between paresis and senile dementia. He "hovered between the two diagnoses," which closely resemble each other (*sic*), until he was more amply informed. He then thought it "reasonable to assume" that the man has premature senile dementia. He thought that Cochran's love for gold is like the fascination of the general paretic for bright objects, but he gave not one scientific datum or observation upon which to base this generous assumption, except a rather stale illustration of paretics "picking gold-leaf from their skins," nothing resembling which in the remotest degree had ever been asserted of Cochran, even in the newspapers. He thought that the prisoner showed a "gross defect of judgment" when he visited Washington, in fear and trembling, to avert the opening of the vault and the disclosure of his dishonesty, and again when, being hopelessly cornered, he confessed. This defect of judgment and this confession are therefore pathognomonic of insanity. The expert is further quoted as having said that in senile paresis thefts are likely to occur "merely from forgetfulness," when even the newspapers described the long years of stealing, the crucible and the melter's tools, and the chests and safes of the old bullion-weigher, most cunningly devised and disposed. He is made to say that such a man "loses sight of the proprieties," when in fact Cochran in appearance was a truly good man and a church-member. He is then described as indulging in vaticination and predicting that Cochran would at once have a lucid interval, so that in court he might present the appearance of a "penitent humbug or clumsy swindler," when in fact we know from good evidence that Cochran has appeared in neither of these rôles. Finally, our imaginary alienist was made to say "to the physician, Cochran would exhibit some exact signs, either of the pupils, of the muscular movements, the reflexes, his speech, his expression of face and his memory, which would establish the morbid nature

of his crime beyond peradventure." But we know that COCHRAN has exhibited none of these.

So we have two kinds of experts. The first and greater of these stands for study, for observation, for candor, for science, for justice, and for professional tradition. The second and lesser of these stands for rumor, for guess-work, for sensationalism, for newspaper notoriety, and, above all, for self.

THE PROGNOSIS OF MALIGNANT ENDOCARDITIS.

WE are too prone to consider malignant endocarditis a necessarily fatal disease. At any rate we waver in our diagnosis if recovery ensue in a given case. If, however, we look upon malignant endocarditis simply as one extreme of the varied types that inflammation of the endocardium may assume, the fact will be forced upon us that there must be some cases in which the degree of malignancy is not so great as to irrevocably condemn the patient to death. The point that we would make is that so-called malignant or ulcerative endocarditis represents a condition removed clinically and pathologically only in degree from other varieties of endocarditis. Certainly, the distinction is often difficult to make, both at the bedside and in the dead-house, and, as we have indicated, the criterion is not uncommonly the survival or the death of the patient.

In view of all of the circumstances then, the diagnosis of malignant endocarditis with recovery at the hands of competent observers cannot be rejected. A case in point is recorded by FINLAYSON (*Archives of Pediatrics*, vol. x, No. 11, p. 937). It was that of a boy, ten years old, who came under observation in an attack of rheumatism, and with a history of two previous attacks. The mother was rheumatic and the father had died of some disease of the heart. The child at no time presented signs of valvular disease. While under observation a pericarditis with effusion developed. In the further progress of the case there were frequent paroxysms of pyrexia, attended with nausea and vomiting. The emaciation was pronounced, and several times death seemed imminent. Toward the close of the illness, which lasted for nine months, there were present for many weeks distinct, soft, fluctuating swellings upon the dorsal aspect of the carpus on both sides. Indications of embolism were carefully looked for, but could not be detected. Recovery was ascribed largely to forced nutrition.

The diagnosis in this case may be criticised from the absence of direct signs of endocardial inflammation, such as a murmur, but it is pointed out that ulcerative endocarditis may be unattended with any lesion of the valves recognizable during life. The knowledge that malignant endocarditis is not necessarily fatal must thus act as a stimulus to its energetic treatment.

EDITORIAL COMMENTS.

Inoculatiom-diphtheria in Milch-cows.—The importance of the question as to the transmissibility of diphtheria by means of cow's milk, and particularly through the intermediation of the udders of diseased animals, is entirely too obvious to require discussion. Any light upon such a subject must hence be extremely welcome. A. C. ABBOTT (*The Journal of Pathology and Bacteriology*, vol. ii, No. 1, p. 35) reports the outcome of an investigation as to the results produced in milch-cows by inoculations of the bacillus diphtheriæ, which are somewhat at variance with the conclusions of a previous study of similar kind made by Klein. While the latter reported the occurrence of lesions upon the udders of inoculated animals, in addition to the local lesions at the site of inoculation, all containing virulent diphtheric bacilli, Abbott failed to observe any lesions upon the udders and was able to find the bacilli only on the local lesion. Klein also found bacilli in the milk of the infected animals, while Abbott did not. Other things being equal, the positive observations in a single series of experiments must have greater weight than the negative observations in a corresponding series, so that a decision in the matter must yet be held in reserve. Further studies will be required to determine which of the two opposed conclusions is to be accepted, and as the subject is of such profound importance, it is to be hoped that these studies will not long be wanting. In Abbott's paper attention is called to variations in the morphologic appearances of undoubted diphtheria bacilli dependent upon variations in the culture-medium.

Farming Out the Business of Surgery.—It seems that a company has been formed with headquarters in New York City, with hindquarters in Chicago—and perhaps with other parts scattered over the country—which makes a business of insuring against accidents and casualties. There also appears to be some mysterious business arrangement whereby workmen, willy-nilly, are to be made recipients of the bounty and the tender care of the contract surgeon. Here is a copy of a letter received by a surgeon in Chicago from the "attorney" of the company:

"DEAR SIR: Your name has been furnished me as a surgeon whom Messrs. —— & —— Company would like to have attend employés injured at their plant.

"Messrs. —— & —— Company are insured in the —— —— —— & —— Company, and, by their policy, this Company, which I represent, pays all reasonable doctor's bills for attendance on injured employés.

"I enclose two schedules of medical charges used by the regular surgeons of this Company, and would request that you look the same over, and advise me if you

would care to work pursuant to the rates mentioned therein.

"Upon receipt of a favorable reply from you I will advise Messrs. —— & —— Company that you have accepted our schedule, and request them to call you in all cases of accident to their employés.

"Yours truly, —— ——."

The following is the schedule of charges:

Day visit	$1 00
Night visit (between the hours of 8 P.M. and 6 A.M.)	2 00
Mileage to unusual distances 10 cents per mile additional fee.	
Office consultation (ordinary)	50
Dressing hand or foot, first time, in ordinary coupling accidents—	
Day	2 00
Night	3 00
Subsequent dressings (at home office) when absolutely necessary	1 00
The following charges include after-treatment in *ordinary* cases. They are established with the understanding that extra attendance, if unusual complications arise in the cases specified, may be charged for in addition; but in such cases, as well as in all others not provided for, the extra charges shall not exceed 50 per cent. of the usual fees in like cases.	
Amputation at hip-joint	75 00
" of thigh	50 00
" of leg	25 00
" of arm or forearm	20 00
" of finger or toe	5 00
" of metacarpal or metatarsal bones (according to gravity of case)	$5 00 to 10 00
Reducing and dressing fracture of thigh	25 00
" " " of leg	15 00
" " " of arm or forearm	5 00
" " " of finger or toe	5 00
" " " of jaw	10 00
" " " of clavicle	10 00
" " " of ribs (according to the gravity of cases)	$5 00 to 10 00
" " " of patella	20 00
Reducing dislocation of hip-joint	25 00
" " of patella	10 00
" " of ankle	15 00
" " of shoulder	10 00
" " of elbow	10 00
" " of lower jaw	5 00
Trephining skull	40 00
Dressing incised or lacerated wounds (according to gravity of case)	$1 00 to 5 00
Cutting down upon and ligating important arteries,	$10 00 to 25 00
Reducing ordinary hernia and application of truss in cases due to accident occurring in discharge of duty	5 00
Operations for strangulated hernia	$30 00 to 50 00
Introducing catheter	1 00
Applying galvanic battery—first application	1 00
" " " subsequent applications	50

The Bicycler Should Sit Erect.—We have previously alluded to the danger to health from the common practice of the bicycle-rider doubling himself up like a capital C. We are glad to notice that a most eminent English physician, Sir Benjamin Richardson, himself an enthusiastic rider, has also been warning the public in this matter. Bicycling is such a noble and beautiful form of athletics that we should do all we can to keep it from becoming injurious by evil habits and tendencies. Sir Benjamin says:

"There is no doubt that a great deal of harm is at present being done by injudicious cycling. The attitude that nearly all cyclists adopt, to a greater or less degree—bending themselves forward over the handles of their machines—is undoubtedly most unhealthy. And, though I cannot explain the reason for taking up such an attitude, I know that I have to keep a careful watch over myself to maintain an erect position.

"The doubled-up position does more harm than people imagine. Of course, everybody knows that it is ugly. The spinal curves are the most perfect in nature, both for strength and beauty, and these are destroyed. The top of the anterior curve is brought forward—and I am not sure that the posterior curve as well is not affected—until the spine becomes almost an arc. The chest-bone is then affected by the unnatural pressure placed upon it. The circulation is impaired, and, no doubt, the lungs are interfered with, too. In fact, there is hardly any possible evil effects which it does not produce."

The Fog-horn Nuisance.—Among the grand benefits of civilization none is more praiseworthy than the safeguards thrown about those "who go down to the sea in ships." The life-saving stations, the light-houses, the channel-markings, and the hundred signs of forethought and solicitude for the safety of our sailors and their freights, are striking instances of the true functions of government and of social progress. It becomes at least very questionable, however, if we are not in some ways running into exaggeration—for example, by putting fog-horns so near thickly-populated shores. We read that on foggy nights, when the fog-horns are continually sounded, a large part of the population of Chicago is unable to sleep because of the intolerable ear-tearing blasts of the instruments guarding the harbor of the city. The sick and nervous people have great distress, and those not sick and nervous are being made so. The noise-injury to the modern nervous system is subtle, great, and serious.

The Etiology of Pernicious Anemia.—Our classification of anemia is eminently unsatisfactory, by reason of our lack of knowledge as to the actual processes upon which the several forms depend. Our therapeusis is thus weakened, for it is not always possible in a given case to determine whether the blood-poverty is dependent upon undue hemolysis or defective hemogenesis. Of the etiology of that special form of anemia to which the designation essential or idiopathic or pernicious has been given, our definite knowledge is perhaps least. Many observers have carefully examined the blood in the hope of finding therein the causative agent, but none of the findings hitherto made has withstood the test of time. The latest contribution to this subject is an article by Perles (*Berliner klinische Wochenschrift*, 1893, No. 40, p. 963), who in a preliminary report describes minute bodies that he found in the blood of each of three cases of pernicious anemia, but failed to find in the blood in a large number of cases of secondary anemia. The organisms are believed to be parasitic protozoa and to exert a destructive influence upon the hemoglobin. They are described as being from 3 to 4 μ long, about one-fifth as wide and about one-twentieth as thick. They are highly refracting and possess the power of spontaneous motion. Appendices have been observed upon some of the organisms, but true flagella were not distinguishable. In the cases examined the number of organisms present was in direct proportion to the gravity of the case.

Organic Liquids.—We have been credibly informed that Brown-Séquard is as firm as ever in his belief in the efficacy of organic liquids prepared according to the methods described by him. He has, however, taken up other lines of work, so that this particular method of

treatment has fallen into a secondary place with him. A circular received from the Laboratory of Medicine of the College of France announces that it can no longer supply the demands of the profession for the organic liquids. The method of preparation is, however, said to be so simple as to be possible of execution by any intelligent physician or chemist. A brochure descriptive of the method has been written by D'Arsonval, the collaborator of Brown-Séquard in the preparation of the liquids, and issued by Masson, the well-known Paris publisher. Attention is called to the fact that no reliability can be placed on any of the numerous officinal extracts of organic liquids upon the market.

A Query in Medical Ethics.—A correspondent inquires whether the following advertisement, inserted in newspapers, is in violation of the Code of Ethics of the American Medical Association:

"Dr. John Smith, physician and surgeon, office and residence ————, will answer calls day or night. Specialty, the treatment of drunkards, with success. No humbug! No treatment by correspondence."

It is, of course, against the Code. Generally speaking, it is a bad thing to do; this particular thing is especially bad, and the particular manner of this doing makes it particularly bad.

The Relation between General Paralysis of the Insane and Syphilis.—DEWEY (*Chicago Medical Recorder*, vol. v, No. 4, p. 233) makes an exceedingly interesting and valuable contribution to the etiology of general paralysis of the insane. He reports three series of cases of general paralysis in both husband and wife, in some of which syphilitic infection was admitted or obvious, while in the remainder it was extremely probable. The frequency with which wives are infected with syphilis by their husbands is difficult of determination, but it may reasonably be great.

The Chicago Clinical Review has undertaken a commendable enterprise in its endeaver to record the titles of the most important contributions to medical literature from month to month, together with an alphabetic list of the more valuable clinical articles. The efforts of the *Review* should receive the hearty encouragement of medical writers and medical journals.

SELECTION.

DR. J. S. BILLINGS ON THE EFFECTS OF HIS OCCUPATION UPON THE PHYSICIAN.

THE word "profession," as applied to medicine, refers to the existence of a body of men who profess, or publicly claim, that they have special knowledge, the result of which, in the shape of advice and, in some cases, of manual skill, they offer to the public. It is understood that the relations which a professional man holds to his clients, to his professional brethren, and to the public at large, are somewhat different from those which exist among laborers, mechanics, and tradesmen. Some of the requirements based upon these relations—such as the really having the special knowledge and skill claimed, and the obligation of secrecy as regards the affairs of his clients—are truly ethical; others are merely matters of custom and manners, and pertain to etiquet rather than to ethics.

For example, it is a fundamental principle of professional etiquet that it is improper to ask the public or individuals to give one employment, except in so far as such a request is implied in a simple notice, giving name, profession, and office-hours. As I have said elsewhere—

"The ordinary forms of business competition, by advertising the qualities of one's wares, or cheap prices, or by calling attention to superior results obtained, are not permitted to the professional man, so far as the public is concerned. He not only may, but should, publish accounts of his work when this involves anything new and useful to his profession, because this is for their benefit; but such publication should be made in a professional journal, and not in the daily press, because in the latter it would be practically an advertisement."

There is nothing essentially immoral or unethical in advertising, so long as the truth is adhered to; but when a physician subscibes to, and agrees to abide by, the regulations of a certain code which, among other things, forbids such advertising, it then becomes unethical to break such agreement. This is the reason why codes are framed: in order to exercise a certain amount of compulsion upon those who subscribe to them. Obedience to such a code becomes a habit, and produces a disposition to consider all the prescriptions of the code as being in themselves ethical, or resting on ethical grounds; and that any man who acts otherwise is acting wrongly and unethically, although he has never subscribed to the code and is not bound by it. Many physicians gradually come to consider their code of medical etiquet as a sort of formula of religious faith, and are almost as much shocked at propositions to change or to abandon any part of it as they would be at a suggestion to change the Ten Commandments, and perhaps it is well, upon the whole, that this should be the case.

The occupation of a physician in general practice influences his habits in several ways. I will specify but a few. First, it tends to make him cautious in the use of intoxicating drinks. Not only are the evil effects of excessive use of alcoholic fluids brought to his notice almost daily, but he knows that it is never safe for him to drink enough to cloud his judgment or to affect his speech or gait. He never knows but that he may be called the next moment to see an important case, and he does know that even a suspicion that he is under the influence of alcohol when thus called upon will seriously injure his business. In the second place, his work cultivates the habit of self-sacrifice. However much he may try to adjust his daily round to suit his own convenience, he must continually obey calls which seriously interfere not only with his pleasures and social enjoyments, but with his comfort, and sometimes with his health. He must turn out from his comfortable bed on cold and rainy nights; he must miss his meals; he must give up the little excursion which he had planned; he cannot plead a headache, or a cold, or weariness, as a sufficient excuse for declining to obey a call from one of his patients.

This self-sacrifice becomes habitual; he does not question, and doubt, and hesitate as to whether he might or might not properly refuse, but under ordinary circum-

stances simply obeys—and it does not even occur to him that there is anything specially praiseworthy in his doing so.

It is a common idea that the practice of medicine tends to blunt the feelings—to make one less sympathetic with suffering, and also to induce a comparatively low view of human nature—owing to the many weaknesses, immoralities, and even crimes with which the physician necessarily becomes acquainted. It is true that the physician knows of many private skeletons carefully closeted, the existence of which the world does not suspect, and in this respect he is like a priest; but he also becomes aquainted with much self-sacrifice, devotion to duty, and love which is stronger than death, which are equally unknown to the public, and upon the whole I do not think that his work tends to the atrophy of his emotional faculties, although it may sometimes lead to their exercise in somewhat special directions. He sees many cases in which what most people call vicious and even criminal manifestations appear to him to be largely due to physical abnormity or disease, cases of periodic drunkenness, of reckless licentiousness, of weakness of will-power, of morbid conscientiousness, and the like, for the evil tendencies and results of which he can hardly hold the persons mentally and morally responsible. It becomes natural to him to consider such manifestations with less aversion, and to be less severe in his condemnation of the individuals in whom they appear, than most people are inclined to do; in other words, he becomes more charitable in his interpretation of motives.

The physician is called upon sometimes to decide very difficult problems in the matter of giving truthful answers to the questions which are asked of him. In a certain number of cases the great majority of, if not all, physicians will decide that it is their duty to give a false answer, or at all events to give a false impression—either for the purpose of avoiding the immediate danger to the life of the patient which a true statement to him might produce, or for the purpose of preserving secret certain information of which he has come into possession in the course of his professional work. I do not think that this tends to lower his standard of accuracy and truthfulness in other matters; but it does tend to make him more independent of the literal verbalism of a creed, and more ready to rely on his own judgment in certain ethical matters. On the other hand, much of the work of a physician tends to make him critically accurate in the observing and noting of phenomena, and in the application of remedies. The use of apparatus for counting, weighing, and measuring, which will give results independent of the personal equation of the user, is one of the characteristics of modern medicine. The doctor does not ask whether the patient has fever, but "what is his temperature?"

This habit of precision and accuracy is increased by the necessity for punctuality in the daily work of a busy physician. His appointments with his patients and with the physicians whom he is to meet in consultation must be kept if he is to succeed, and his time must be portioned by minutes.

The fact that physicians serve the poor without pay exercises a very considerable influence upon the development of their moral character. Undoubtedly much of this service in the earlier part of a physician's life is given for the sake of the experience which he thus obtains, but it is also true that the doing of this makes it a habit, and, as Dr. Weir Mitchell says—

"The virtues which grow to be thoughtlessly habitual are none the less virtues. We tell the truth, are honest, are just, or punctual because the qualities in question have grown to be a part of us. At last they exact no effort, involve no indecision, and above all, no self-praise."

The study and practice of medicine do not necessarily make a man virtuous, or honest, or a gentleman; in a few cases, as shown by the records of the courts, the special knowledge and opportunities of the physician may have led men to commit crimes which they would not have attempted if they had not been medical men—but, fortunately, such cases are very rare.

In the great majority of cases the special influence of the medical life of the present day is to broaden the views of the man who lives it, to make him indepedent in judgment; rather skeptical as to the occurrence of the millennium in the near future; quite incredulous as to the truth of the maxim that "all men are born free and equal;" more inclined to consider and perform the immediate evident duty of the day and hour which lies just before him than to reflections upon the errors of other men; free from morbid fear of death, and of that which comes after death; and none the less a believer in the existence of a Supreme Being and in the fundamental principles of religion, although he may not consider them capable of scientific demonstration.—John S. Billings, in the *International Journal of Ethics*.

CORRESPONDENCE.

A BREECH-PRESENTATION, WITH FRACTURE OF THE FEMUR.

To the Editor of The Medical News,

Sir: During thirty-three years of active practice, and with a record of 2719 cases of childbirth, it had been my good fortune not to have had a case of fracture of any of the long bones in delivery until last March.

Summoned about 4 P.M. to attend a primipara, I found the patient to be a very large, fleshy woman, whose limbs were distended to an enormous degree with water, greatly impeding locomotion. Her pains were regular, severe, and close upon each other. Thinking that labor was progressing rapidly, I requested and made an examination, under antiseptic regulations, and found a very hard, rigid os, dilated to about the size of an ordinary five-cent nickel-piece. Ordering a pill containing five grains of quinine sulphate every hour, I left, promising to return in the evening.

Returning at about 8 P.M., I found the pains still regular, strong, and quite close together. An examination revealed a still rigid os, but somewhat more dilated than at the previous visit, though not sufficiently to permit making out the presentation. I administered an emetic of ipecacuanha, which acted promptly.

After waiting half an hour another examination was made, and I found not only a soft, dilating os, but the membranes ruptured, and a breech presenting. Some twenty minutes later the patient was seized with a

violent convulsion. Morphin sulphate, gr. ¼, was given hypodermatically, and a messenger hurriedly despatched to my office for instruments and assistance. A colleague arrived in a short time, and upon examination and consultation we concluded to deliver as quickly as possible by podalic version. The patient was placed in position, chloroform administered, and efforts made to bring down the feet. This was a somewhat difficult procedure, as the limbs were completely flexed upon the abdomen and chest, and a foot could not be reached. A finger was hooked over the left thigh, and in the efforts to bring the leg down a snap was heard, the limb came down, version was effected, and delivery was soon completed.

The babe, a fine twelve-pound boy, was very much asphyxiated, but persistent efforts at resuscitation were finally successful. Upon examination of the child the left thigh was found to be broken at the upper third, just below the great trochanter. A temporary splint was applied. On the next day, upon receiving THE MEDICAL NEWS of March 25th, I saw Dr. Hubbard's illustrated article, and at once had the father, who is a mechanic, make a splint according to the directions, from a half-inch board. After having padded the splint well it was applied, and the little fellow was kept upon it for four weeks. Upon its removal I found a good, straight, and perfect leg. I think the splint a most excellent one for fractures of this kind, and heartily recommend it to those who may happen to meet with these unfortunate accidents.

The mother made a good recovery, without any recurrence of convulsions, and the babe to-day is in perfect health. Truly yours,

J. HOOD OWINGS, M.D.

DEER LODGE, MONTANA.

A LARGE DOSE OF CHLORALAMID.

To the Editor of THE MEDICAL NEWS,

SIR: A Keeley graduate just back from Dwight, complained of insomnia and severe supra-orbital pain. For a fortnight his wife exhausted all her resources to tempt his appetite, but failed to get him to eat a square meal. He gradually grew languid, restless, and obstinately constipated; but his greatest distress was due to insomnia and the pain in his head. He took to his bed on the fifteenth day after his return home, refused all food, and "behaved himself like a maniac." At ten at night his brother came to me for some hypnotic to give the poor fellow a little relief; I prescribed the following:

℞.—Chloralamid	. . . .	gr. cxl.
Spt. vini gallici	. . . .	℥ss.
Potass. bromidi	. . . .	gr. xl.
Syrup. aurantii Aq. dest.	. . . āā	℥iv.—M.

Sig.—Take a tablespoonful every hour until relieved.

The next morning I was informed that the patient had swallowed the whole bottle at a draught, and was having a "delightful pull of sleep." His wife, however, who had tried to wake him up for breakfast, but had not succeeded in getting him even to open his eyes, sent to me to inquire "whether anything should be done, or if he should be let alone and allowed to sleep it off?"

I hurried to his home, and found him in a stupor, from which he could be aroused for a moment and answer questions intelligently. His pulse was weak, and twenty-five beats to the minute, but fairly perceptible and perfectly regular. Respiration was slow but rhythmic. The surface of the body, the head, and the hands were warm and comfortable. He said he was free from pain, and that his headache was gone, but wished to be "let alone, and not disturbed." He had passed his urine involuntarily in bed some time during the night.

A teaspoonful of aromatic spirit of ammonia, properly diluted, and repeated in fifteen minutes, soon brought him to consciousness and raised his pulse to sixty.

After a while he got up, staggered to the table, ate a good breakfast and then "went back to bed." He slept through the whole day undisturbed, and awoke of his own accord, for supper, late in the evening.

He has been in fairly good health ever since and perfectly free from his head-troubles.

I suppose this is the largest dose of chloralamid on record. M. H. LACKERSTEEN, M.D.

5038 WASHINGTON AVENUE, CHICAGO.

NEWS ITEMS.

Dr. Leon Le Fort, a distinguished surgeon and Vice-President of the French Academy of Medicine, died recently, at the age of sixty-one years.

Bechterew has succeeded Mierzejewski in the chair of neurology and psychiatry in the Military Medical Academy of St. Petersburg.

Dr. John M. Keating, of Philadelphia, died of pneumonia, at Colorado Springs, on November 18th, whither he had gone some three years ago on account of failing health. He was the eldest son of Dr. William V. Keating, and was well and favorably known as an obstetrician, gynecologist, and pediatrist. He made a considerable number of valuable contributions to medical literature, and held a number of important positions in Philadelphia, where he was universally respected and esteemed.

BOOKS AND PAMPHLETS RECEIVED.

The Actions and Uses of Pental. By David Cerna, M.D., Ph.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Transactions of the Fourth Annual Meeting of the Medical Society of the State of Washington. Spokane: Willcox Printing Co., 1893.

Hydrogen Dioxid as an Aid in the Diagnosis of Sinuses, Fistula, Concealed Pus-cavities, etc. By W. M. L. Coplin, M.D. Reprinted from the Therapeutic Gazette, 1893.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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PHILADELPHIA.

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ORIGINAL ARTICLES.

NOTES ON SOME CONGENITAL ANOMALIES CONNECTED WITH THE BRANCHIAL APPARATUS.[1]

BY RUDOLPH MATAS, M.D.,

VISITING SURGEON CHARITY HOSPITAL, ETC., NEW ORLEANS, LA.

I. CONGENITAL INCOMPLETE EXTERNAL FISTULA OF THE NECK, IN THE LINE OF THE FOURTH PHARYNGEAL CLEFT.

ON May 31, 1892, a female infant, two weeks old, was brought to my office, upon the recommendation of the midwife who had delivered the mother, for the purpose of explaining the nature of a peculiar mark on the neck that had been noticed immediately after the birth of the infant. This "mark," when first seen, presented the appearance of a little dot, in the center of which could be detected a minute orifice. On the second day after birth the midwife noticed that a little albuminous fluid oozed from the orifice. There was no redness or evidence of inflammation about this little opening. When I examined the child I found a distinct fistulous orifice at a point about one quarter of an inch above the right sterno-clavicular articulation and on a line with the anterior margin of the sterno-mastoid muscle. The neighborhood of the fistula appeared soft, pliable, and free from inflammatory hardness; nevertheless, by pressing and pinching up the skin around the fistula, a considerable amount, about ten or twenty drops, of a thick, ropy puruloid fluid, was made to exude from the opening. By insinuating a slender probe into the orifice, a tract leading to a sinus nearly two inches in depth was readily discovered. The tract was obliquely directed upward and inward, under the sterno-mastoid muscle, and toward the pharynx, when further progress appeared to be arrested by a *cul de sac*. There was some sensitiveness, possibly pain, aroused by the exploration, as the child would cry when the probe was introduced, though no manifestations of great distress or of a reflex character were elicited. The injection of milk with a small syringe was attempted, but this only distended the tract, and was immediately returned after the withdrawal of the syringe. The orifice of the fistula was carefully watched while the child suckled, and as no milk was seen to escape through it, I concluded that it did not communicate with the pharynx.

The fistula was the only visible or recognizable abnormality presented by this infant; in fact, it was an unusually healthy, robust, and well-formed baby. The parents of the child are both Americans, of English-Irish extraction; the father is a mechanic, aged thirty-four years; the mother is thirty years of age. Both are in excellent health, and know nothing of any condition similar to this in their respective families. The mother has given birth to other healthy children, and cannot account for her baby's condition by any hereditary influence.

From the congenital existence of the fistula, its situation just above the right sterno-clavicular articulation, and along the line of the sterno-mastoid muscle, it was plain that this fistula was a relic of embryonal life, and, to be more specific, a teratoid evidence of imperfect closure of the fourth branchial cleft, or, probably, better, of the *precervical sinus*. (His.)

While congenital fistulæ in this situation are not altogether rare, they nevertheless possess a peculiar attraction to the thoughtful physician because their pathogeny is so intimately connected with the earliest developmental facts of embryonal existence, and their presence recalls a period in human ontogeny which is of critical importance, and when any disturbance or accidental interference with the normal evolution of the embryo is likely to be followed by the most disastrous consequences. This consideration alone encourages me to believe that a few remarks on this and other illustrations of teratoid anomaly will be of sufficient interest to justify their presentation.

Though we are told by G. Fisher[1] that as early as 1789 Hunkowski published two observations on congenital fistula of the neck, it is nevertheless true that a knowledge of the true nature of the condition has not been vulgarized in the profession until the last fifteen years. And yet the correct interpretation of some of the types of this condition is still a matter of discussion among the ablest teratologists. It is admitted by all writers that Dzondi,[2] in 1829, first seriously attracted the attention of the profession to the subject, describing it as "congenital tracheal fistulæ." This designation proves clearly that Dzondi had fallen into a serious error in regard to the true nature of these congenital tracts, but Ascherson[3] (1832) soon demonstrated that they had nothing to do with the larynx, but rather, when the fistulæ were complete, that they implicated the pharynx. The latter author attempted to explain their mode of formation by the embryologic data furnished by the investigations of Rathke, Husche, Von Baer, and Burdach, on the branchial arches.

Following closely upon Ascherson's original paper other observations and contributions appeared in Germany, from Luschka, Roser and Heusinger,

[1] Communicated, with presentation of patients and specimens, to the Orleans Parish Medical Society.

[1] "Historische Notiz zur Angeborenen Halsfistel, Deutsche Zeitschrift für Chirurgie, 1873, Bd. ii, p. 150; also in "Die Krankheiten des Halses," Deutsche Chirurgie von Billroth und Lücke, Stuttgart, 1880, B. xxxiv.

[2] Dzondi: "De Fistulis Tracheæ Congenitis" (Halæ, 1829), quoted by Fisher, loc. cit.

[3] Ascherson: "De Fistulis Colli Congenitis," Berlin, 1832.

and in France, from P. Broca, Faucon, S. Duplay, Sarrazin and Cusset. So much work had been done in this direction that Heusinger, in 1864, had collected 46 cases; Cusset, in 1877, over 70; Fisher, in 1880, had gathered 100; and finally, in 1890, Konstanecki and Mielecki were able to base their most recent and complete study upon a total of 125 observations.[1] This last memoir is based upon the most recent embryologic researches of His, Kölliker, Fol, Rabl, etc., on the normal development of the neck. Though still more recent, and equally important from the critical standpoint, are the chapters in the unfinished *Traité des Affections Congenitales*, by Professor Lannelongue, vol. i, 1891, and the erudite article by A. Broca, in the *Traité de Chirurgie* (Duplay-Reclus), vol. v, 1891, to both of which I am greatly indebted for my references.

We know but very little of the causes that lead to congenital fistulæ of the neck. The most salient point in the etiology thus far obtained lies in the frequency of heredity as an etiologic factor. Fischer was able to associate hereditary influence in 21 cases among 232 observations. Hereditary influence may manifest itself through several generations, as shown in Ascherson's observations, in which eight individuals of the same family were affected with branchial fistulæ in the course of three generations.

Though this condition is the result of a developmental vice of the branchial apparatus or of the precervical sinus (in cases of infra-hyoid fistulæ), it is a notable fact that it is rarely associated with other malformations, though concomitant deformity of the external ear has been noted by Heusinger, and of the middle or internal ear, by Virchow. While sex does not appear to exercise any determining influence, it is nevertheless true that in the latest statistics of Konstanecki and Mielecki, a certain predominance of the male sex is noticeable.

Branchial fistulæ may appear in three different ways. (1) They may be complete, connecting the external integument with the pharyngeal cavity; (2) they may appear as blind external sinuses opening upon the cutaneous surface; and (3) they may be blind internal sinuses, diverticula or *cul de sacs* opening only into the pharynx. This last form, according to Lannelongue, is of doubtful existence. The incomplete external fistula is by far the most frequent. Thus of 75 fistulæ, 52 were of this class, 18 were complete, and 5 were internal. The seat of the external or cutaneous orifice is variable, but it is far more common along the anterior border of the sterno-mastoid and in the infra-hyoid region than elsewhere.

[1] K. Konstanecki und A. Mielecki: "Die Angebornen Kiemen Fisteln des Menschen," Arch. für path. Anat. und Physiologie, 1890, Bd. cxx, p. 385, etc.

Topographically, congenital fistulæ may be classified as follows (Lannelongue):

1. Fistulæ opening into the concha of the ear.
2. Fistulæ opening into the supra-hyoid region, which is common to the four branchial clefts.
3. Fistulæ opening in the infra-hyoid region, *a*, median; *b*, lateral.

The internal opening of the complete fistulæ is almost invariably recognized in the tonsillar region and at the base of the tongue. This internal orifice is usually very small, easily escapes the eye, and can only be demonstrated by injecting the external orifice with milk or some coloring-substance. But Heusinger reports a case in which the orifice was large enough to admit the little finger, and in another instance reported by Mayr it was associated with diverticula or pockets in which food accumulated.

In the case herein reported, exploration has been attempted by the probe, and injection of the external orifice, with the result of demonstrating the incompleteness of the fistula.

In some cases the escape of the ingesta furnishes excellent proof of their completeness. Thus a patient of Heusinger's would frequently notice fragments of bread with water or other fluids escaping through the cutaneous orifice, while at meals; in other cases, such as those related by Santi and Meinet, "a few drops of milk would escape out of the external orifice while the child nursed."

As a rule, the external orifice of the fistula is the seat of a serous or mucoid exudation which resembles saliva (on this account is mistaken sometimes for a salivary fistula), and the resemblance being more pronounced in some cases because this secretion appears to be increased during mastication.

In the majority of cases these fistulæ cause but little inconvenience beyond the discharge of the characteristic secretion. Sometimes the external orifice becomes red, sore, and inflamed, and especially so with some women during the menstrual period. (Maury's case.)

Dysphagia and other disagreeable symptoms have been noticed in many cases but, as a rule, congenital fistula is a very bearable complaint, rarely, if ever, giving rise to dangerous symptoms.

The pathogeny of these fistulæ is probably their most interesting feature. In considering their mode of formation we must revert to the primitive branchial state. We should remember that the first branchial arch originates at the base of the skull in the sphenoidal region and forms the maxillæ. The second branchial arch, known also as the stylo-hyoid arch, serves as the groundwork for the hyoid apparatus, constituted above by the styloid process, which is attached to the temporal, lower down to the stylo-hyoid ligament and terminates

below in the lesser cornua of the hyoid bone. The third branchial arch issues from the temporal region of the skull, and terminates below in the great cornua of the hyoid. Finally, the fourth arch, which is situated behind the preceding, begins above, just behind the third arch, and descends into the neck to form the soft parts of the anterior cervical region, including the larynx and trachea.

"The first branchial cleft,[1] which lies between the first, or maxillary, and the stylo-hyoid arch, does not disappear completely in extra-uterine life. A portion of the auditory canal, formed by the Eustachian tube, the tympanic cavity, and the external auditory canal, remain as permanent vestiges of its existence. The second and third clefts lie very closely together throughout their whole length. For this reason it is difficult to say to which of the first three clefts the fistula belongs. The fourth cleft follows a direction which is clearly indicated by the anterior margin of the sterno-mastoid muscle. The upper half of this furrow lies very near to the third cleft, but its lower half is quite separate and distinct from the upper level of the thyroid cartilage to the manubrium sterni. The fistulæ, therefore, which open along the lower half of the anterior border of the sterno-mastoid are attributable to defective closure of the fourth branchial *cleft*.

This explanation of the origin of these fistulous tracts, especially those of the auricular and lateral supra-hyoid region, has been admitted with practical unanimity as a classical teaching until very recent years; and in fact, an observer so competent and authoritative as Lannelongue (*Maladies Congenitales*, 1891) still regards this theory as the one that best explains their presence, though he admits as plausible the more recent explanation given by His and Rabl. According to these observers and their followers, these embryonal vestiges should be accounted for by an imperfect closure of the *sinus præcervicalis* (His) or the cervical canal of Rabl—a deep anfractuous furrow that is found at the base of the neck, at the end of the branchial period. It is formed by the junction of the ectodermic surface of the branchial arches with the thoracic integuments—the thymus gland appearing at its deep and lower extremity. Any anomaly in the development of this sinus, or even of the thymus itself, would readily explain the persistence of these congenital fistulæ or cysts in this region of the neck. Lannelongue insists, however, that this theory would account for the lower incomplete or blind fistulæ, but that the complete fistula is explicable only by an imperfect closure of a branchial cleft.

There is a great deal to be said in favor and against both the older and the more recent views, especially when we consider the almost constant position of the internal orifice in complete fistulæ, notwithstanding the most variable position of the external opening, but we cannot stop to discuss the embryologic aspect of the question in all its details, and we must proceed with other considerations.

[1] Or, better, pouch, as the later researches of His, Born, Kölliker, Piersol, and others, have demonstrated that no open clefts really exist between the branchial arches.

II. CHONDROMATOUS FORMATION ASSOCIATED WITH INCOMPLETE CONGENITAL CERVICAL FISTULA OF THE THIRD OR FOURTH CLEFT.

One of the most interesting features of these branchial fistulæ is that which refers to the presence of solid cartilaginous or osseous masses that are found attached to the walls of these tracts or along the line of the branchial arches.

In a case reported by Heusinger, he observed a lamella of bone fully three centimeters in breadth at its base, and twenty-eight millimeters in length. Heusinger, Duplay, and Manz have recognized similar osteo-cartilaginous masses in the region of the branchial arches in persons who had no fistulæ.

It was by rare chance that I met with a case that evidently owed its peculiarities to the same pathology.

The patient, a male, laborer, German, aged twenty-four years, was admitted into my service in ward 8, out-clinic, Charity Hospital (in the summer of 1891), for the removal of an inflamed dermoid of the right supra-orbital region. While examining the man I noticed a small chondroid mass situated near the right sterno-mastoid at its anterior margin, about three inches below the mastoid, nearly opposite the thyroid cartilage. The mass had an elongated fusiform shape, and measured about one inch and a half in length. It was very hard and painless; while apparently movable it had ill-defined but deep attachments; it was situated below the deep fascia, and was partially adherent to the sheath of the muscle. About one quarter of an inch below the lower extremity of the mass there was a small depression that contained a very minute opening, so fine that only the bristle of a hypodermatic needle could be insinuated into it for a very short distance. The patient said that he had always had this lump, even from earliest childhood, but as it had never bothered him he had allowed it to remain without disturbance. He also stated that the little opening would occasionally discharge a whitish-looking fluid, but this occurred so rarely that he did not pay any attention to it. He knew but very little of his family history excepting that his parents were healthy and living in Germany. One brother was living, but he was not aware of any abnormality in his case. I suggested the removal of the chondroma and fistula, but he insisted that the removal of the dermoid was enough and that he would come later for the treatment of the cervical growth. But he failed to do so, or at least he did not return again during my term of service.

In this case I believe the diagnosis was congenital chondroma, with associated fistula, of branchial origin, which I would easily have overlooked had it not been that the presence of the dermoid made me think of congenital abnormalities.

Now, what interpretation must be given to these congenital hard growths? Should they be regarded

as rudimentary branchial arches or visceral ribs, following Heusinger's expression, which are developed here in consequence of a defective evolution of the branchial arches?

A rational answer can only be obtained from the data of comparative anatomy and embryology.

Lannelongue, who is deeply learned in these matters, says:

"We know that in the vertebrata that breathe through a permanent branchial system (gills), each permanent branchial arch is provided with a cartilaginous framework which is modeled very much like the ribs of the same vertebrate. Each and all of the vertebræ of fishes, from the caudal extremity to the head, give attachment to ribs. In this class there is no distinct neck. The branchial ribs are continuous above with the cranial ribs and below with the thoracic set. On the other hand, the mammifera are free from cervical ribs, or rather the cervical ribs are reduced to the condition of mere osseous appendages without any definite function, and are united to the bodies of the vertebræ.

"The branchial arches, which are distinct in the embryonal period, become fused later on, and their skeletal frame persists only in a very rudimentary manner. We do not refer to the skeleton of the first branchial arch, which resolves itself into the maxillæ (they are true cranial ribs). But the completely developed branchial ribs, which persist in fishes, are reduced in man, in the case of the second and third arches, to the suspensory apparatus of the stylo-hyoid ligament and os hyoides.

"The fourth branchial arch is entirely deprived of all osseous elements in man, except in the median portion, where the larynx and trachea are formed at its expense. Outside of these respiratory organs, there is no osseous structure to indicate the situation of the fourth branchial pouch in the normal human adult."

Therefore, the skeleton of the branchial arches is very much developed in the facial arch; is rudimentary in the second and third arches, which leave as relics isolated bony and cartilaginous formations, viz., the stylo-hyoid apparatus; and, finally disappear almost *in toto* in the region of the fourth arch. It is true, nevertheless, that the third and fourth branchial arches of the embryo possess rows of cartilages which are analogous to the cartilages of Meckel and Reichert (of the first and second arches). We can readily understand, therefore, that in many instances these primitive cartilaginous formations, instead of becoming atrophied and disappearing, as occurs normally, may, under some disturbing developmental factor remain and develop into the peculiar chondroid and osseous formations that have been herein described.

III. CASES OF CONGENITAL PRE-AURICULAR CHONDRO-FIBROMATA OR AURICULAR APPENDICES.

Apropos of the cartilaginous formations along the lines of the branchial arches and pouches previously described, I have the opportunity of exhibing to the Society a typical specimen of the more common variety of *pre-auricular symmetric* fibro-chondroma, which I removed three weeks ago from the pre-auricular region of a young Jewish gentleman (aged twenty-two years), who thought it a simple "wart," and wanted it removed for purely esthetic reasons. The accompanying photograph gives a pretty clear idea of the appearance of the tumor before its removal. My client had originally two such growths at birth, one in front of each ear (both auricles being perfectly proportioned and well formed), but one was snipped off by a physician some years ago, who also called the growth "a wart," and did not appear to pay much attention to it. These curious growths may be classed with the group of embryonal malformations which are directly traceable to a vicious or teratoid development of the branchial apparatus. The appearance

FIG. 1.

A typical congenital pre-auricular fibro-chondroma, or so-called supernumerary auricle; symmetrical. (Author's case.)

of these little tumors is very characteristic, and when once seen they are not easily forgotten or mistaken for anything like a wart. They appear usually as smooth, slender, elongated, and conoid or club-shaped masses, which usually project rigidly from the skin and measure about three-fourths of an inch in length in adults. They are usually thicker at the free end than at the attached portion, which is narrow and constricted. By palpation a distinct rod of cartilage can be felt imbedded in the mass, and by further exploration it is found connected with the cartilage of the ear. This cartilaginous rod is not always present, especially when the tumor is found in the region of the fronto-nasal plate. These growths are always covered with a skin of perfectly normal appearance.

The congenital appendices here referred to are usually situated, as in the case reported, in the pre-auricular region, near the tragus, with which they are usually connected by a cartilaginous plate; then, much less frequently they are found in the line leading from the tragus to the commissure of the mouth, and more rarely still they are found along

the whole of the median line of the face on the bridge of the nose; again, they have been found springing from the mucous membrane of the lower lip (see Fig. 3) and also in the neck on the anterior sterno-mastoid line along the region of the fourth branchial cleft.

Congenital fibro-chondromata may be single or multiple. There may be one, two or three growths at one of the usual points of election. Generally they are single in the middle external surface of the cheek or on the anterior sterno-mastoid line. They are frequently multiple in the pre-auricular region. In addition they have a tendency to appear symmetrically on the two sides of the face or neck.

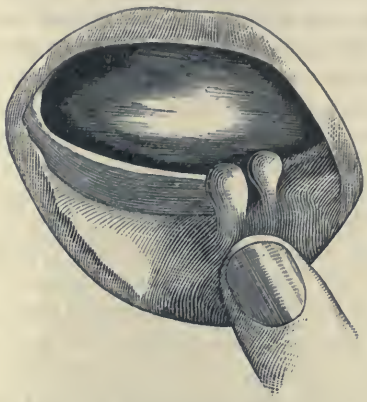
This multiple symmetric tendency was well shown in the case of a little boy, aged two years, whom I chanced

FIG. 2.

Three congenital fibro-chondromatous appendices in the pre-auricular region associated with another pedunculated fibro-chondroma of the cheek, in the line of the intermaxillary clefts. Author's case. Sketch after LANNELONGUE, Obstet., lxxvii; Maladies Congenitales, vol. i, p. 563.)

to see in the streets while paying a visit to a patient in the neighborhood. The child presented an entirely normal appearance, with the exception of the presence of three little tumors on each side of the face in the pre-auricular region; there was also another growth on the cheek which was less rigid and more pedunculated than the others. The parents were very poor, and did not appear to be troubled by the condition of the child in the least. I noticed that the mother had several small fibro-lipomatous masses about the face; two on the bridge of the nose and one on a level with the external canthus of the left eye, all of which were apparently congenital. I made a memorandum of the case, intending to return soon to have photographs of both the mother and the child, but the people had moved out of the neighborhood, and I have never heard from them since. The child's appearance was so strikingly like that represented by Lannelongue on page 563 of his *Maladies Congenitales*, vol. i, that I have reproduced that figure with slight modifications, as it will give an exact idea of the situation of the growths in my case.

FIG. 3.

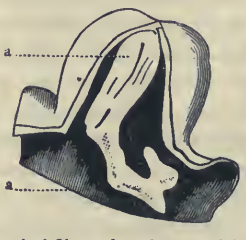


Congenital fibro-chondromata, projecting from lower lip into the mouth. (After LANNELONGUE.)

In my case there was no associated congenital coloboma nor a kerato-conjunctival dermoid, as in Lannelongue's little patient, but the three pre auricular appendices and the growth on the cheek, on a line with the inter-maxillary cleft, were almost identical.

The exact pathogenesis of these growths is still obscure. They have been studied by Sue, Reismann, Rynd, Morgan, Southam, Van Duyse, but particularly by Lannelongue,[1] by Poirier, and Retterer (*Bull. Société Anatomique*, 1880, *Journal de l'Anatomie*, 1890–91; by J. Bland Sutton ("On

FIG. 4.



Section of a congenital fibro-chondroma of the neck. a.a. Cartilaginous, club-shaped rod at center of tumor. [The pre-auricular varieties are connected with an irregularly-shaped flat plate of cartilage, which serves as a basis or pedestal for the cartilaginous rod.] (Modified after LANNELONGUE, Affections Congenitales, vol. i, p. 544.)

Branchial Fistulæ, Cysts, Diverticula, and Supernumerary Auricles," *Journal of Anatomy and Physiology*, 1887, vol. xxi, p. 289); also by A. Broca (*Bull. de la Société Anat.*, 1889, and an article in Duplay et Reclus, *Traité de Chirurgie*, 1891, vol. v.)

In view of the varieties that have been described

[1] Lannelongue et Achard, Traité des Kystes congenitaux, Paris, 1886. Lannelongue et Menard, Maladies congenitales, vol. i, 1891.

it is possible that all are not ascribable to the same pathogeny, though the bulk of evidence is emphatically in favor of their purely branchial origin.

Bland Sutton, for instance, has with characteristic ingenuity and ability availed himself of the researches of His on the development of the pinna to explain the existence of the pre-auricular variety of these "supernumerary auricles" (as he calls them, with other English writers), on the theory of an aberrant or independent development of a primary auricular tubercle, which has been detached from or has failed to fuse with the general mass of the pinna.

"When supernumerary auricles appear in the neck they are to be regarded as outgrowths from the margins of the branchials, repeating the conditions normally existing in the two anterior arches instead of being suppressed." The same author in his delightful lectures on "Evolution in Pathology," (*Lancet*, February 18, 1888) confirms the original observation of Heusinger who had noticed that the pendulous "tags" which are frequently observed in the necks of goats and other animals are analogous to the "supernumerary auricles" found in man, and interestingly shows also that the existence of these appendages had not escaped the attention of the ancient sculptors, who in some of their statues of fawns and satyrs reproduced not only the "tags" of the lower animals, but also the fibro-chondromatous appendices of the neck, as they are seen in man.

Sutton's theory, plausible as it may appear, is not altogether satisfactory, for it does not account for those cases in which these appendices appear in their most typical form in the pre-auricular region of individuals with *perfectly formed ears*. If these were always due to a defective development of the pinna we could understand that the growth has been formed by a detached tubercle, but this not being the case we must seek for another explanation.

At one time Lannelongue, Trelat, and Magitot had thought that the pre-auricular varieties could be accounted for by a vicious budding of Meckel's tubercle, but this opinion has been abandoned by Lannelongue, who, after a careful analysis of all the evidence, now holds "that these congenital fibro-chondromatous appendices of the neck, as well as of the face, originate in an abnormal budding of the branchial arches on a level with the clefts which separate them at a certain period of embryonal life."

The arguments in favor of this view are forcibly presented by this distinguished observer, but I could not appropriately present them here. I will, therefore, forego their discussion. I shall only briefly repeat what has been noted by others, that congenital fibro-chondromata are frequently associated with other teratoid manifestations, viz., macrostoma, auricular malformations, atrophy of the inferior maxillary, which have been observed by Rynd, Morgan, Van Duyse, Trelat, and others. (Broca.) Lannelongue has been particularly struck by the influence of heredity in their production. Van Duyse has insisted upon the importance of amniotic adhesion as a causative factor, but judging from my limited experience and the observations of others it would appear that this association is rather an accidental and exceptional circumstance than a constant factor in the pathogeny.

As to the treatment of these types of congenital abnormalities that are here presented, little need be said except that extirpation is the indication whenever it is practicable. An incomplete fistula may be completely removed by dissection, even in very young children, but the traumatism involved in the extirpation of the more complete variety with a pharyngeal aperture is too great to inflict on infants and even young children. This field of surgery is still comparatively unexplored, and to my knowledge there is but one recorded case of successful extirpation of a *complete* branchial fistula. This is the case of E. Tricomi.[1]

The patient in this case was a woman, aged twenty-four years, who had a complete fistula, the external orifice of which was situated in the right anterior sterno-mastoid line, 2½ centimeters above the right sterno-clavicular articulation, 2 centimeters to the right of the median line, and 8 centimeters below the angle of the lower jaw. The external opening of the fistula measured 2 millimeters in diameter and allowed a probe to penetrate a distance of 10 centimeters in depth. A colored liquid was injected through the lower orifice, and it was discharged into the pharynx, behind the right tonsil, through the internal orifice. Deglutition was effected normally, but the act of swallowing was accompanied by a tugging sensation and severe headache. An incision was made which extended from the external opening to the angle of the jaw on a guide furnished by the probe in the fistulous canal. The whole tract was exposed and readily detached from the neighboring parts to which it was but slightly adherent, and the upper part was dissected out with the help of the finger introduced into the pharynx. The pharyngeal opening was then closed by suture. The result was a complete success.[2]

Irritant injections have been carefully tried. Weinlechner (quoted by E. Albert, Vienna) has thoroughly tested iodin, and has convinced himself of its absolute worthlessness.

It should always be remembered that any procedure that would close only the *external* orifice of a complete fistula would simply create a pharyngeal

[1] E. Tricomi: Un caso di fistola congenita completa dell collo (fistola branchiale), La Riforma Medica, p. 541, August 28, 1891.

[2] Other cases of successful extirpation of congenital fistulæ have been reported; for instance, that of G. Cavazzarri (Riforma Medica, Oct. 7, 1891), and the later cases of Schlange (Verhand. der Deutsche Gessellschaft für Chirurgie, xxii, Kongress, 1893); but I am not certain that they were *complete* fistulæ.

diverticulum wherein food-stuffs and secretions would accumulate with disastrous results, so that the extirpation of a complete fistula should not be undertaken unless it is formally contemplated to remove the whole tract.

While the operative treatment of congenital fistulæ may become a very serious matter, it is otherwise with the treatment of the congenital fibro-chondromata which can be easily, quickly, and painlessly removed under cocain-anesthesia. It is well to remember their deep cartilaginous connections, especially in the pre-auricular variety, in order that a proper cosmetic effect may be obtained.

TYPE OF DISEASE AMONG THE FREED PEOPLE (MIXED NEGRO RACES) OF THE UNITED STATES.

Based upon the Consolidated Reports of over 430,466 Cases of Sick and Wounded Free People (mixed African Races), and 22,053 of White Refugees, under Treatment from 1865 to June 30, 1872, by Medical Officers of the Bureau of Refugees, Freedmen, and Abandoned Lands.

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INTRODUCTION.

THE organization of the Medical Department of the Bureau of Refugees, Freedmen, and Abandoned Lands, has presented an admirable opportunity to settle definitely some disputed points concerning the type, character, and specific differences, if such exist, between diseases as found in the African and the Caucasian races in this country.

With the view of endeavoring to furnish to the members of the medical profession some information on the points mentioned, the accompanying consolidated reports have been compiled, and I desire, briefly, to call attention to the facts elicited. It may not be amiss, by way of explanation, to state that the operations of the Medical Department of the Bureau of Refugees, Freedmen, and Abandoned Lands were on a much more extended scale than is generally supposed. During the years 1866–68, there were in operation fifty-six bureau hospitals and forty-eight dispensaries. One hundred and thirty-eight physicians were employed, who visited the sick, not only at the hospitals, but at the camps and settlements, where they had been assembled by the results of the war.

The total number of patients (freed people) under treatment from 1865 to June 30, 1872, was a little over four hundred and thirty thousand (430,466). It should be clearly understood that the Consolidated Report (No. 1), showing the cases of disease that occurred among the freed people embraced all the shades of color among them, from the jet-black skins belonging to the pure African race up to the mulatto and quadroon.

This report and Report No. 2, giving the cases of disease treated among the white refugees who fled into our lines for protection during the war, are exact transcripts of the official records now in possession of the War Department. The total number of these cases was twenty-two thousand and fifty-three (22,053).

NUMBER OF CASES OF DISEASE TREATED, AND MORTALITY.

The total number of colored patients under treatment from the organization of the Medical Department of the Bureau, June 16, 1865, to its discontinuance by law, June 30, 1872, was 430,466. This total is somewhat less than that which would be given by adding together the number of patients under treatment, as given in the annual reports of the chief medical officers of the bureau for the years 1865 to 1872, for the reason that to avoid duplication all cases have been dropped from the summary after having been once reported.

The total number of deaths recorded among the freed people was 18,027, or nearly 4.02 per cent. of the number under treatment.

The total number of white refugees under treatment during the period beginning as already mentioned, and ending June 30, 1869, was 22,053, and the number of deaths was 735, or about 3.33 per cent of the number under treatment.

INTERMITTENT AND REMITTENT FEVERS.

On examining the Consolidated Report (No. 1) of diseases prevailing among the freed people, it will be seen that the most prominent on the list, as regards both the number of cases and the number of deaths caused by them, are the so-called miasmatic diseases.

The number of cases of remittent fever, and of quotidian, tertian, quartan, and congestive intermittent fevers combined, reaches the surprising total of 115,855. The number of deaths from these diseases was 1351, showing a mortality of about 1.16 per cent. of the cases treated.

The ratio of the number of cases of remittent and intermittent fevers to the number of cases of all other diseases treated was 26.91 per cent., or nearly 27 per cent.

I have stated that the large number of cases of remittent and intermittent fevers is surprising, and it certainly is so when we consider the statements so frequently made by medical authors that negroes are not subject to miasmatic diseases.

In order to show that the conclusions drawn from the statistics mentioned are correct, I will only refer to the *Medical and Surgical History of the War of the Rebellion*, issued under the direc-

tion of the Surgeon-General, U. S. A., by Assistant Surgeons J. J. Woodward and G. A. Otis, U. S. A., vol. 1, 1873, table No. III, pages 710–712. This table shows that the total number of colored troops of the United States Volunteer Army under treatment from 1864 to 1866 was 629,354. The total number of cases of remittent and intermittent fevers treated among these troops during this period was 152,141, or 24.17 per cent. of the total number of colored soldiers under treatment.

Whatever may be the fact in Africa, it is very certain that the negro of pure or mixed blood, as naturalized in this country, is not exempt from the operations of the causes that induce remittent and intermittent fevers. This large average ratio, however, is surpassed in some localities, for we find in certain places and in certain years that the average ratio is higher than that given; indeed, as it will be seen by the accompanying table, in the year 1868 the ratio of cases of remittent and intermittent fevers to other diseases in Florida was 45.40 per cent., and in the State of Arkansas, in the same year, 54.43—over one-half the entire number of cases of disease under treatment:

TABLE SHOWING NUMBER OF SICK AND WOUNDED FREED PEOPLE UNDER TREATMENT BY MEDICAL OFFICERS IN THE BUREAU OF R., F. AND A. L., IN THE YEAR 1868.

Districts.	Total number of patients treated.	Total number of cases of malarial diseases treated.	Ratio per 1000 of malarial cases.
District of Columbia	4,590	727	15.84
" Virginia	32,770	7,443	22.71
" North Carolina	7,000	1,595	22.78
" South Carolina	39,827	12,084	30.34
" Georgia	14,618	6,310	43.16
" Alabama	1,004	449	44.72
" Florida	1,339	607	45.40
" Louisiana	6,995	2,843	40.64
" Mississippi	5,113	2,000	39.11
" Arkansas	3,972	2,165	54.43

Another point of interest to be noted is the fact that the number of cases of malarial diseases increases in proportion to the number treated, as we proceed south along the States bordering upon the Atlantic seaboard and Gulf of Mexico, just as in pulmonary tuberculosis the proportion of cases to other diseases increase as we pass alosng the Atlantic seaboard in a northeasterly direction.

The number of cases of malarial diseases increases, as stated, till we reach the Gulf States, and finally reaches its maximum in the States bordering upon the lower parts of the great Mississippi Valley. Our hospitals were also, as a rule, necessarily located near the Atlantic seaboard and bordering upon the Mississippi River, these being the most important points of communication, and where were aggregated the largest number of freed people requiring medical assistance.

The total number of cases of remittent and intermittent fevers occurring among the white refugees (see Table No. 2) was 5905, being 26.78 per cent. of the total number under treatment.

The remarkable similarity of the ratio of the white and colored patients under treatment would seem to convey the inevitable conclusion that there is very little difference, if any, between the susceptibility of the colored people and that of the white people of the Southern States to the attacks of remittent and intermittent fevers.

COMPARATIVE FREQUENCY OF VARIOUS FORMS OF MALARIAL FEVERS.

The most frequent form of malarial fevers met with among the freed people of the Southern States is the quotidian, being 41.30 per cent. of the entire number of cases of intermittent fevers under treatment.

It has been a disputed point among authors as to whether the quotidian or tertian is the most frequent form of intermittent fever. Dr. W. C. Maclean (*Reynolds' System of Medicine*, 1870, vol. 1, p. 595) says: "The tertian is said by many authors to be the primary type of fever, and to be the most common of all. This is certainly not the case in India, where, without doubt, the quotidian is the most common and the quartan the rarest of all intermittents." The remarks of Dr. Maclean with reference to the fevers in India are exactly paralleled by the experience of the physicians of the bureau in the treatment of the cases occurring among the colored people of the South. By referring to the *Medical and Surgical History of the Rebellion*, vol. i, page 710, which shows the statistics of sickness and mortality of the colored troops during the war, it will be found that the quotidian form of intermittent fever was also the most common among them, being 42 per cent. of the number of cases of malarial fever under treatment.

It is somewhat interesting to note that when we examine the statistics of cases of intermittent fever occurring among the white refugees, as seen in Report No. 2, and who lived in similar localities, we find a difference in the type of fever, and among them the tertian is found to be the most frequent, being 38.47 per cent. of the cases under treatment. Excluding quotidian and tertian fevers, the form of malarial fever most frequently met with was remittent fever, being found in the proportion of a little over twenty-three (23) per cent. of the total number of cases, and showing an aggregate of 26,793.

SCROFULA AND PULMONARY TUBERCULOSIS.

The total number of cases of scrofula reported was 6613, with 299 deaths. The total number of

cases of pulmonary tuberculosis was 5373, with 1787 deaths. The total number of cases of scrofula and pulmonary tuberculosis together was only 11,986, or a little less than 3 per cent. of the total number of cases under treatment.

The foregoing figures are quite sufficient to disprove the statements so commonly made concerning the extreme liability of the colored race to scrofula and pulmonary tuberculosis. So far from these two diseases being almost universally prevalent among the colored people in the Southern States, these people seem to be no more subject to them than the whites who live under like conditions in our larger cities. Scrofula and pulmonary tuberculosis are, in great part, caused by a neglect of the laws of hygiene and sanitary science. These diseases do not seem to be any more destructive to the colored race than to the white.

TYPHOID FEVER.

Of this disease we have 3820 cases recorded, with 951 deaths; *i. e.*, nearly twenty-five (25) per cent. of the cases treated died. The high rate of mortality found in this disease among the freed people was mainly the result of intestinal lesions, characteristic of typhoid fever, and also of the so-called typhoid pneumonias, which were frequently developed during the course of the disease. The lesions of the intestine were very marked. Indeed, in the majority of the cases during life there were evidences of, and the post-mortem appearances showed, the congestion and ulceration of Peyer's patches, so pathagnomonic of typhoid fever. The symptoms presented were those that generally characterize this malady, and were usually so well-marked as to leave no doubt as to the nature of the disease, with the single exception of the eruption, which was so irregular in its time and mode of appearance as to be of little utility as a means of diagnosis.

The cerebral symptoms developed early, and the delirium was of a low, muttering character, and accompanied by the dry, parched, or brown tongue, the sordes on the teeth, uncontrollable diarrhea, and the other symptoms of the true typhoid condition.

In many of the cases the vitality seemed very feeble, and the progress of the disease was very rapid, frequently terminating fatally by the tenth or fifteenth day after the attack.

The so-called typhoid pneumonia, or, properly speaking, typhoid consolidation of the lung, was a frequent and apparently dangerous complication of many of these cases. It was usually without any evidences of acute inflammation, and presented the characteristics of passive hyperemia of the lung, with a great tendency to effusion into the various serous cavities. The type of the disease seemed to require the energetic administration of stimulants and nourishment. Quinine was given in large doses early in the disease in some cases, but seemed only to abate the violence of the febrile symptoms, and had no other influence upon the course or duration of the fever.

DIARRHEA AND DYSENTERY.

The number of cases of these diseases met with among the freed people was very large, the aggregate of acute and chronic cases being 39,528, with 2346 deaths; of acute diarrhea there were 24,763 cases, with 727 deaths. Of chronic diarrhea there were 4777 cases, with 861 deaths. Of acute dysentery there were 8371 cases, with 432 deaths. The greater portion of the mortality met with (as is always the case) is among children and youths.

The large number of cases of lesions of the various parts of the intestinal tract which existed is susceptible of ready explanation when we consider the entire ignorance of the laws of hygiene that prevailed among these people, and their use of improper articles of food. The staple articles of diet among the freed people were fresh and salt pork and corn-meal, with a very insufficient supply of milk and vegetables. To the continued use of this diet, along with neglect of personal ablutions, and the tendency to crowd together in ill-ventilated huts, may be fairly ascribed the great prevalence of this class of diseases which existed during the first two years of the bureau—1865, 1866. The sanitary condition of the freed people, however, it should be here remarked, improved very greatly during the latter years of the bureau, and has in still greater degree since that time.

It was a common remark among the physicians on duty that the diseases that prevailed among the freed people during the years 1867–1872 were milder in type and less fatal than those during and immediately subsequent to the late Civil War. I have been especially struck with this fact in the case of syphilis and other enthetic diseases. An unquestionable amelioration in the type of syphilis has taken place during the past ten years, and we no longer see those dreadful cases of phagedenic ulceration so frequently met with in the cases of syphilis that occurred among the freed people during the years 1865, 1866, 1867. The same, to a greater or less degree, may be said of all the diseases prevailing among them, and is, of course, due to better food, more comfortable habitations, and increased cleanliness.

EPIDEMIC CHOLERA.

Of this disease there were 1247 cases reported, with 691 deaths—or a little over half the cases died. The cases of this disease met with among the freed people mostly occurred during the epidemic of 1866

and 1867, and the localities chiefly affected were those States bordering upon the southern parts of the Mississippi Valley and the South Atlantic States.

On the news being received in the spring of 1866 that the epidemic was approaching, instructions were transmitted by the Chief Medical Officer of the Bureau to the surgeons-in-chief of each district to cause a thorough cleansing and disinfection of all the hospitals, camps, and quarters occupied by the freed people. My personal experience of this epidemic was very limited, being confined to the few cases (some twenty in number) which occurred in the District of Columbia during the summer months of 1866. In these cases the state of collapse came on very early, and when developed seemed scarcely amenable to treatment. The stringent sanitary measures that were adopted by the local authorities of Washington and the Medical Department of the Bureau no doubt had a considerable influence in arresting the spread of the epidemic. These measures included compulsory cleansing and whitewashing at short intervals of the quarters and localities inhabited by the freed people, together with the prompt removal and disinfection of all refuse and garbage, and, of course, prompt isolation of the patients. The curious and rather discouraging fact was developed by the statistics of this epidemic that, under every variety of treatment, about one-half of the patients attacked died. This was not only true among the freed people, but was also the case among the white, who suffered in a like proportion.

SMALLPOX.

The total number of cases of variola reported was 10,299. The number of deaths reported was 1802, or 17.55 per cent.

The greater number of cases (as will be seen by reference to the consolidated report) occurred during the years 1865 and 1866, and the spread of the disease was greatly facilitated by the condition of affairs then existing in the Southern States. Owing to the disorganization of society and the impossibility of securing remunerative employment on the plantations, vast numbers of the freed people aggregated along the northern frontiers of the border States and in the commercial cities of the Atlantic seaboard and Mississippi Valley. Owing to their destitute condition, the Government was compelled to issue rations, and provide for their temporary support in large camps and settlements, until employment could be found for them.

While I would scarcely like to assert that smallpox ever originated *de novo* by the overcrowding that necessarily resulted, yet some cases of smallpox occurred which were scarcely susceptible of any other explanation.

It need scarcely be said that vaccination and revaccination of all the freed people exposed to infection were strictly enforced, and, as a matter of course, with the same result which has always attended its proper enforcement, namely, the eradication of the disease. A striking exemplification of this was seen in the epidemic of smallpox that occurred in the City of Washington, D. C., during the winters of 1865 and 1866. Instructions were issued to the physicians on duty in the Bureau to vaccinate and revaccinate all the freed people not fully protected. During these two years about 10,000 persons were vaccinated or revaccinated, with the result of causing the disappearance of the disease, which did not reappear in Washington as an epidemic until the winters of 1871 and 1872.

The cases of smallpox were, many of them, confluent in type and presented the usual complications of the disease.

DELIRIUM TREMENS.

The small number of cases of this disease met with among the freed people being only sixty-five, with one death, presents marked contrast in frequency when compared with the large number of cases met with among the white population of our country. This may be partially explained by the fact that chronic alcoholism is not so frequent among the colored people as among their neighbors of the Caucasian race; still, there does seem to be even among those of the freed people who habitually use intoxicating drinks a marked exemption from this disease. In the Freedmen's Hospital, under my charge, at Washington, D. C., which has had under treatment from 1865 to the present time about 5000 patients, I remember seeing only one or two cases, and these were mild in type.

My own belief is that the true explanation of this exemption is to be sought for in the want of development of the cerebral hemispheres, which so often exists among the negroes. Delirium tremens is preëminently a disease causing disorder of intellection, and hence the continued abuse of alcoholic drinks in the negro race is more likely to produce epileptiform convulsions or mania than delirium tremens.

In conclusion, I wish to state that so far as my own experience goes I have found that the negro race does not withstand the attacks of acute inflammation, such as pneumonia, nor do they recover from long-continued illnesses such as typhoid fever, as well as the white race. On the other hand, the power of repair of the negro race, after receiving injuries, and being subject to surgical operations, is excellent.

With the exceptions mentioned in this report, I have never found any specific differences between

diseases as developed in the Caucasian and negro races in this country, the differences met with being in degree, and not in kind.

SYMPHYSIOTOMY.[1]

BY BARTON COOKE HIRST, M.D.,
OF PHILADELPHIA;
PROFESSOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA.

MR. PRESIDENT AND GENTLEMEN: In accepting your flattering invitation to deliver the address on Obstetrics on the occasion of your two hundredth meeting I have chosen for my subject symphysiotomy. The position of this operation in the treatment of labor obstructed by a contracted pelvis is beyond doubt the question of greatest present interest in obstetrics. The glamor of novelty surrounding the successful revival of symphysiotomy may have passed away by this time, but the sober second judgment of the profession is now about to be passed upon it. Thanks to the modern method of collective investigation and observation, a few months have sufficed to show defects and advantages in the operation that it would formerly have taken years to learn, so that we are just now in a position, I think, to assign to symphysiotomy its rightful and lasting place among obstetric operations.

It suits my purpose best to indicate first the weak points of the operation that have been manifested in the two years since it has passed from Italy to many different parts of the world.

Foremost among the objections that could be urged against symphysiotomy stands a mortality much higher than was at first anticipated.

In 212 operations since 1887 there have been 27 maternal deaths, a mortality of 12. 73 per cent., while the deaths of the infants during and shortly after birth brings their mortality to a fraction over 28 per cent. In our own country the figures are 30 operations, 4 maternal and 7 infantile deaths, or a mortality respectively of 13.3 per cent. and 23.3 per cent. It must be admitted that many of the deaths were not due to the mode of delivery, but were caused by prolonged labor, by injuries to and infection of the parturient tract. Still some deaths are recorded as the result of hemorrhage from the incision, and others were due to septic infection of the wound.

Another objection that might be advanced against symphysiotomy is the fact that it must be limited to contracted pelves with a conjugate above 6.75 cm. It will be difficult, therefore, for the general physician and even sometimes for the specialist to decide, on the one hand, whether symphysiotomy in a given case is practicable, or on the other hand, whether forceps or version and extraction will not prove successful.

Other considerations against symphysiotomy are the tediousness of the operation, followed as it must often be by some other obstetric procedure; the need of good assistants; the absolute necessity of as thorough asepsis as is demanded in abdominal surgery; the likelihood of serious tears in the anterior vaginal wall involving, perhaps, the urethra and the bladder; the difficulty of keeping the vulva clean during the puerperium, on account of the close apposition of the thighs; and the still greater difficulty of disinfecting the vagina and uterus when necessary.

In contrast with these disadvantages attaching to symphysiotomy, let us glance at the advantages of the operation with which it comes chiefly in competition—Cesarean section. If I may be permitted to judge from the comparatively limited experience of three symphysiotomies and four Cesarean sections, I should regard the latter as decidedly the easier operation. Moreover, by Cesarean section the child is sure to be delivered easily, no matter what the size and shape of the pelvic canal may be, and there is no necessity for that nice calculation in pelvimetry that is usually demanded before a contemplated symphysiotomy, a calculation in which even the best of us may err. Further, the mortality of the infants is not quite so great in deliveries by Cesarean section. Finally, the after-treatment of Cesarean section in a favorable case is much easier for patient, physician, and nurse. It is obvious, therefore, that symphysiotomy can be preferred to Cesarean section on one ground alone—that it is less dangerous to the mother. If statistics demonstrate this, then it is the duty of every intelligent obstetrician to familiarize himself with the indications for symphysiotomy, and possibly with its technique, for this is not an operation to be lightly undertaken by anyone who does not possess skill both in obstetrics and abdominal surgery.

A careful study of the results of symphysiotomy and of Cesarean section will show that the latter is at the very least twice as dangerous to the mother as the former. In Dresden, Vienna, and Glasgow the maternal mortality of Cesarean section (99 operations) in the hands of the best operators has been about 10 per cent. In this country, Dr. Harris tells me, he has collected the reports of 88 recent Cesarean sections, with a maternal mortality of 39.7 per cent. The table which Dr. Harris kindly gave me in response to my inquiry is so very important and interesting that I add it in full:

Cesarean operations in the United States, commencing with October 6, 1882	88
Deaths (maternal)	35
Operations in New York City	21
Women recovered	12
Children saved	17
Operations in Philadelphia	15
Women recovered	10
Children saved	11

		Women recovered.	Children saved.
Operations of 1887	8	5	8
" " 1888	13	5	13
" " 1889	9	6	8
" " 1890	17	13	16
" " 1891	10	7	6
" " 1892	12	9	12
" " 1893	10	6	6
	78	51	61

It may be seen by the table that the results of Cesarean section in this country are not improving with time. Since 1887 there have been 78 operations, with 27 deaths—a mortality of 34 per cent. In 1893 there were 10 operations, 4 deaths—a mortality of 40 per cent! The

[1] The address on Obstetrics, delivered by invitation, before the Washington Obstetrical and Gynecological Society, Nov. 17, 1893.

same thing is shown by taking the last 10 cases in New York and Philadelphia. In the last 10 of New York City —women died 5, children lost 1; last 10 of Philadelphia— women died 3, children lost 2—a mortality of 50 and 33 per cent. in the two cities where the best surgical work of the country might be expected.

As is well known, the best work in symphysiotomy has been done in Italy. There the mortality is but 4 per cent. in the last 50 cases. It is true that there is one city in the world where the results of Cesarean section approach those of symphysiotomy. In Leipzig there have been 54 Cesarean operations, with 3 deaths—a mortality of 5½ per cent. But there is no other locality with a record so good as this. Further, if the causes of death after symphysiotomy and after Cesarean section be compared, it will be found that the first has very few deaths attributable to the operation itself. Take, for example, the 4 deaths after symphysiotomy in this country. One was the result of double non-septic pneumonia; another was due to the shock and exhaustion of a prolonged labor and many attempts at delivery, the operation being performed upon a dying woman. The third was caused by septic peritonitis from infection of the parturient tract; and only one is attributable to the operation itself, the wound being infected during the operation, an accident easily preventable by sufficient cleanliness and proper technique. This is a mortality of but 3 per cent. On the other hand, almost every death following Cesarean section is due to septic peritonitis or to hemorrhage.

FIG. 1.

Pelvimeter measuring distance between outer surface of symphysis, just below the upper edge, and the promontory of the sacrum.

FIG. 2.

Pelvimeter measuring the thickness of the upper part of symphysis. This measurement is to be subtracted from the other. A curved tip is inserted in the pelvimeter for this purpose.

As long, therefore, as the two operations hold this relation to one another in results, symphysiotomy must be the choice of the conscientious operator whenever it is practicable. It follows, consequently, that every one interested in the practice of obstetrics must to-day be familiar with the indications for and the technique of this operation, and it is to these two phases of the subject that I shall devote the remainder of my paper.

Indications. There are two mistakes to be guarded against in deciding for symphysiotomy in a labor delayed or obstructed by a symmetrically contracted pelvis. One is the resort to this operation when some less radical means would deliver the woman safely of a living child; the other is the attempt to deliver by symphysiotomy through a pelvis too small to permit the passage of a living child, even when the pelvic bones are separated as widely as possible without injury to the sacro-iliac joints. The first mistake has not been uncommon during the excitement attending the revival of the operation. The most notorious example is the delivery by symphysiotomy of a VII-para, who had given birth to her six children spontaneously and had only lost one, which presented by the breech. This mistake is easily guarded against. I have been summoned expressly to perform symphysiotomy more than thrice as often as I have performed the operation. The application of forceps to the head above the brim will, in practised hands, often secure engagement, and if the attempt is carefully made no harm is done, even should it fail. Version and extraction are to be considered, too; but the danger of these procedures to the child is also to be taken into

account. With my own experience of three perfectly uncomplicated recoveries from symphysiotomy, I feel disposed to regard this operation with more favor than version and extraction in a markedly contracted pelvis. The opposite error of opening the symphysis when the pelvis is too small to permit of delivery by this means is more difficult to escape. It will only occur, of course, in a pelvis with a conjugate of 67 mm. or under, a degree of contraction not often seen among us; and, could we always feel sure of the accuracy of our pelvic measurements, the mistake could be pretty surely avoided. But every one knows that, though we report the dimensions of the conjugate diameters of our cases with great precision, we cannot feel absolute confidence that our measurements are always correct. The estimation of the conjugate from the diagonal conjugate is liable to serious error, even though we allow for an increase in the conjugato-symphyseal angle and in the height of the symphysis. For example, I have operated on two rachitic dwarfs, primiparæ, each with a diagonal conjugate of scant 9 cm., say 8¾, and therefore with a true conjugate presumably of not less 67 mm. In one I extracted the child with the greatest ease; in the other I broke the child's clavicles and its neck in my efforts to pull the head, coming last, through the contracted pelvis, though the symphysis gaped widely. In both cases the head measurements were almost identical. To avoid this possibility of false calculation I have had constructed a pelvimeter to measure the conjugate as nearly directly as possible. The idea, you will recognize, is borrowed from Skutsch; but this pelvimeter, I think, is better than his.

I can imagine no more embarrassing predicament in obstetrics than a failure to extract the head after opening the symphysis. I should feel reluctant to operate again at the lowest limit for symphysiotomy unless I had the opportunity first to induce labor and artificially dilate the cervix some two or three weeks before term. In this case I should not hesitate to operate with a conjugate as low as 65 mm., and I believe delivery might be possible with a conjugate of only 6 cm.

Technique.—It is unnecessary to describe in detail all the steps of an operation with which the medical world has of late become so familiar. I shall limit this section of the paper to the discussion of certain moot questions in the technique upon which I entertain strong convictions.

The incision in the lower abdomen, extending to within about three-quarters of an inch of the symphysis, and the severance of the joint from below upward and within outward subcutaneously, are much to be preferred to the incision directly over the symphysis. By the former the wound can easily be kept clean in the lying-in period. Troublesome hemorrhage is not so likely, and the urethra is free from danger. By the latter I do not see how the wound can be kept clean with any degree of certainty. Hemorrhage of an alarming character is to be expected, and the urethra is more likely to be cut. The complaint from some German writers in regard to the fever that follows symphysiotomy is to be explained, I think, by their preference for the direct incision. I have had two entirely afebrile convalescences, and in the third case fever only developed on the twelfth day in consequence of a phlegmasia that had no connection with the operation at all. On the whole, I prefer the old-fashioned model of the Galbiati knife. The long beak enables one to cut almost entirely from below upward, and thus avoid bleeding as far as possible. Dr. Harris's modification of this knife is so closely adjusted to the posterior surface of the symphysis that it cuts as quickly forward as it does upward, and is likely to wound the veins behind the clitoris. I can see no reason for suturing the symphysis. This is troublesome, prolongs the operation, favors inflammation in the joint, and is not necessary. A firm pelvic binder and a close apposition of the thighs, tying the knees together, if necessary, will secure a better approximation of the bones than any stitch could do. It is surprising to read the different methods proposed in recent German articles for suturing the symphysis. I have not yet done this, and, as each one of my cases has had a firmly united pelvis without it, I believe that it is entirely unnecessary.

A very valuable preliminary step in the operation itself is the thorough dilatation of the cervical canal. As the head does not enter the superior strait in the majority of cases in which symphysiotomy is called for, the os will not be well dilated, no matter how long labor may have lasted, so that the cervix will present a serious obstacle to quick delivery after the symphysis is cut, especially in primiparæ. For this purpose I have a Barnes bag twice as large as the largest sold in the shops. After using the three ordinary sizes, allowing each to remain in the cervical canal for some time, I have inserted this largest one, distended it to its full capacity, and allowed it to remain in place for at least an hour. Then, if it is necessary (as it usually is) to apply forceps or to perform version, the child can be extracted as rapidly as the operator desires. In one of my cases, in a primipara, over thirty years of age, the child, now living and well at the age of six months, was delivered in less than five minutes after the pelvic bones were separated. When the artificial dilatation of the cervical canal was begun in this case, it would just admit one finger. Finally, as to the fixation of the pelvis, the cleansing of the vulva, and the care of the abdominal wound. The first is secured by broad rubber adhesive strips and a stout obstetric binder, coming well down over the trochanters. The vulva is protected by a pad of salicylated cotton and carbolized gauze, and is cleansed by a stream of water from a fountain syringe, several times a day, the patient resting upon a bedpan. The wound need not be disturbed for more than a week. When it is desired to expose it, the lower part of the binder is unpinned, a window cut in the adhesive strips, which are reinforced by others over them when the dressing is completed. In this way the pelvis need not be subjected to the least strain.

To prevent stretcthing of the new-formed union in the joint I have kept my patients in bed five weeks.

Novel Prizes are offered by a member of the Anthropological Society, of Washington, D. C., for the best essays (3000 words) on the subject of the elements that go to make up the most useful citizen of the United States, regardless of occupation. The first prize is of $150, the second of $75, and the essays are to be submitted before March 1, 1894. Particulars may be obtained of the Society. Here is a chance for the literary doctor, and we hope he may win!

AN OUTBREAK OF TYPHOID FEVER PRESENTING UNUSUAL FEATURES.[1]

BY WM. C. DABNEY, M.D.,
PROFESSOR OF THE PRACTICE OF MEDICINE IN THE UNIVERSITY OF VIRGINIA.

THE atypical forms of typhoid fever during the past few years have received much attention, and doubt has frequently been expressed whether atypical cases should be considered typhoid at all. A singularly favorable opportunity for studying cases of this character was furnished by an outbreak at the University of Virginia in the winter and spring of the present year (1893), and I propose to give a brief account of the outbreak in this paper.

In order to understand the origin of these cases it will be necessary to state briefly the arrangement of the lodging-rooms and eating-rooms at the institution.

The buildings of the University used as dormitories by the students are scattered over a space of ten or twelve acres, and there are four hotels, or "mess-halls," at which the students get their meals. A student can select his own boarding-house, so that each hotel has "table boarders" from all parts of the University grounds.

At the time of the outbreak—on February 17th—there were about 530 students at the University. Of this number about 350 roomed in the University buildings and took their meals in the University hotels.

There had been no typhoid fever at the institution for many months, nor were there any cases in the vicinity except one, of which I shall speak later.

On the 19th of February I was consulted at my office by Mr. D. D. H., a law student, who complained of loss of appetite, debility, and headache; his temperature was between 101° and 102°. Influenza was prevailing at the time, and I thought it probable that he was suffering with an attack of that disease, but a few days later he sent for me, and I found him with a well-marked attack of typhoid fever, which pursued a mild but typical course and ended in recovery.

A few days later I saw Mr. K., an academic student, who had severe headache, a temperature of 104°, aching in his limbs, and constipation; he had been sick only twenty-four hours; he was given salophen in six-grain doses every four hours, and the next day he went to his home in a neighboring city, where, as I was informed, he had a mild attack of typhoid fever.

These two young men lived in different parts of the University, but took their meals at the same boarding-house and sat at adjacent tables.

Perhaps before going further I should mention that the water-supply of the University is perfect in all respects, and the system of sewerage is excellent.

Just after the occurrence of the second suspicious case I found that there was a negro man—a waiter—ill with typhoid fever in the basement of the hotel where these young men got their meals. On further inquiry I found he had been ill for about four weeks, and that another waiter who lived outside of the University grounds also had the disease. I did not see either of these cases, but was informed by the physician who attended them that they were typical cases of typhoid, one being quite severe in character.

Between this time and the 1st of April there were ten additional cases, making fourteen in all, and these patients lived in different parts of the University grounds, some being a quarter of a mile apart, *but all took their meals at the same hotel.*

Immediately after the occurrence of the second case and the discovery of the ill man in the basement of the boarding-house, the dining-room was closed and a thorough inspection of the building and premises was made by the health committee, consisting of three physicians and two engineers. Nothing was found about the house to account for the sickness, and an examination was then made of the milk-supply. It was found that a part of the milk-supply of this boarding-house came from the dairy of the keeper of the house. An inspection showed that the dairy was situated some distance from the University and on the banks of a creek, into which one of the main University sewers opened and at a point *above* the dairy; it was further found by questioning the milkman that he got water from a point about twenty yards below the opening of the sewer, to wash the cows' udders before milking. Besides this there had been a case of typhoid fever on this creek a mile above the dairy during the previous autumn, and the discharges from this patient—an ignorant negro—were thrown upon the ground without disinfection.

Before proceeding to consider the peculiar features of some of these cases, I wish to emphasize certain points that I have already mentioned:

1. There had been no typhoid fever in or around the University for several months, so far as I could learn, except one case in the vicinity, from which infection was practically impossible.

2. Between the middle of January and the 1st of April there occurred fourteen cases of continued fever among persons living or employed in the University grounds.

3. The persons who had this continued fever had rooms, in many cases, widely separated from each other, but all took their meals at the same hotel.

4. The water-supply of this hotel was the same as that of the other hotels and of the other parts of

[1] Read before the Section on General Medicine of the Pan-American Medical Congress, September 6, 1893.

the University, and the sanitary condition of the building was good.

5. A part of the milk-supply was obtained from cows whose udders had been washed with water contaminated by sewage, and probably infected with typhoid-fever germs. It was in evidence also that at least five of the fourteen persons used milk at every meal. Probably there were others who did so, but I could only get definite information as to five.

Of the fourteen cases of this continued fever, ten were under my professional care and four under the care of other physicians, though I saw one of these four cases at the commencement of the attack, and another near convalescence; several of my cases were seen also by my colleagues, Drs. Towles and Barringer, of the University of Virginia. Of the fourteen cases one was in a child, twelve years old—the daughter of the hotel-keeper; the others were in young men between the ages of 18 and 25 years.

Of the ten cases under my immediate care there were but three that pursued anything like the typical typhoid fever course. The first patient, Mr. D. D. H., was taken sick on February 17th, and his evening temperature was normal for the first time on March 5th; his temperature during this time ranged between 101° and 103°. The eruption in this case was well marked; the bowels usually moved spontaneously, but there was at no time any diarrhea. The only complication was an inability to pass urine, which for a week necessitated the use of the catheter.

Mr. G. was taken sick on March 4th with nausea and vomiting. His temperature ranged from 101° to 105° till March 25th, when he had a profuse hemorrhage from the bowels, with extreme prostration; the hemorrhages recurred at intervals until the 30th; there were no more hemorrhages after that time, but the stools were liquid, very offensive and passed involuntarily. On April 5th, the morning temperature was 101° and the evening temperature 103°, and by the 10th the patient was free from fever, but there was still some delirium. In two or three days, however, this passed away, and he seemed to be progressing very favorably for a week, when he was suddenly taken with violent convulsions, which recurred in rapid succession till his death, twelve hours later. No autopsy could be obtained.

There was but one other fairly well-marked case of typhoid fever among my ten cases. Mr. W. was taken sick on March 14th, but I did not see him till the 19th; his temperature then was 104.5°; his pulse was rapid, and his skin wet with sweat; he had severe headache, but there was no other disturbance of any kind. His evening temperature did not fall to the normal for four weeks, and ranged during the attack between 103° and 99°. A peculiarity about this case was that the temperature was higher during the first week than at any subsequent time. His bowels were constipated throughout and had to be moved by enemata. There was no eruption in this case, nor was there any tympanites, and though I have placed it in the list of well-marked cases, it was far from typical.

The seven remaining cases presented more or less atypical features, and I shall consider the different symptoms in order, to show their atypical course:

1. The ONSET was gradual in six cases, and sudden in one, commencing in this latter with a chill.

2. The DURATION was six days in one case, eleven in another, fifteen days in a third, eighteen days in a fourth, and over four weeks in the remaining cases.

3. The TEMPERATURE in five cases was higher during the first three days than at any subsequent time; the evening temperature on the day that I was called—the first or second day of sickness—being 103.7°, 102.8°, 102°, 101.8°, and 102.6° in the respective cases. One of these cases lasted over four weeks. In the remaining cases the temperature was very variable and the attack in each lasted over four weeks. For example, Mr. A. C. I., a medical student, had a temperature of 102° on the morning of April 1st, 103 4° in the evening; on April 3d, A.M. 100.6°, P.M. 103.4; April 9th, A.M. 99.6°, P.M. 103.5°; these striking variations were entirely irrespective of treatment and were marked throughout the whole attack; this was the only case except the fatal one already mentioned, in which there was diarrhea.

The following case presents somewhat similar variations of temperature: Mr. D. P. was taken sick on

March 26.	Temperature,	A.M. 100.5°,	P.M. 103°
April 1,	"	" 100.6°,	" 103.2°
" 3,	"	" 100.2°,	" 101.6°
" 9,	"	" 100 6°,	" 99.1°
" 11,	"	" 98.2°,	" 99.4°
" 15,	"	" 99°,	" 99 9°
" 17,	"	" 99°,	" 102°

Neither of these patients had ever had malaria in any form, nor did they live in malarial districts, one being from Highland County, Va., the other from Winchester, Kentucky.

4. The PULSE presented no features of especial interest; it was rarely over 100, except in two cases—the one in which there was hemorrhage from the bowels, and in another, that of Mr. D. P., which ran a mild but tedious course.

5. The DIGESTIVE SYMPTOMS. There was loss of appetite in all cases after the first week, but during the first week two of the patients complained of being very hungry. Nausea and vomiting were present for a short time in two or three of the cases, but these symptoms were not marked. Diarrhea occurred in only two cases—that of Mr. G., in which there was hemorrhage from the bowels, and that of

Mr. A. C. I.; in both it was very obstinate and troublesome. In all the other cases constipation was a marked symptom. Iliac tenderness was present in five cases, and tympanites in two.

6. The ERUPTION was present in only two of the ten cases under my care.

7. The URINARY SYMPTOMS were not marked. In one case there was retention of urine, requiring the use of the catheter. Ehrlich's test (for diagnostic purposes) was not employed in any of the cases, as previous experience had satisfied me that it was of little value.

8. WEAKNESS, emaciation, and anemia were marked symptoms in the later stages of all of the cases.

I have thought it well to put the history of this outbreak of fever on record for the following reasons:

1. It furnished a singularly favorable opportunity for studying an unusual source of infection.

2. In an outbreak—of which the cause could be determined with reasonable certainty—occurring at a time when no form of continued fever was prevailing in the community, we find a number of persons infected from the same source, some of whom presented the typical features of typhoid fever, while others had a fever which would never have been classed with typhoid but for the surrounding circumstances.

It is of course conceivable that the cases that seem to me to be atypical typhoid fever were really of a different character, but in view of the facts that all originated from the same source and all grades of severity were observed, such a conclusion seems to me scarcely tenable.

CLINICAL MEMORANDA.

PROFOUND TOXEMIA WITH SLIGHT TUBERCULOUS LESIONS.

BY WILLIAM OSLER, M.D.,
PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

THE symptoms of a profound intoxication in tuberculosis are met with under three conditions: First, in those rare cases, described most commonly in children, in which death may occur with symptoms of a profound toxemia before there are any extensive localized foci of disease. "The children have presented in the course of the disease all the signs of a profound intoxication, and as the tuberculous lesions of the lungs and all other organs are altogether insufficient to produce death, it is quite reasonable to attribute the fatal results to the bacillary intoxication." (Aviragnet.[1]) These are the instances of the *fièvre infectieuse tuberculeuse suraiguë*. Second, acute miliary tuberculosis is often accompained with toxic features, giving to many of the cases clinical pictures of severe typhoid fever. Post-mortem, miliary tubercles are found extensively throughout the viscera and on the serous surfaces. Third, in chronic pulmonary tuberculosis there may develop, with or without fever, a profound toxemia, with dry tongue, delirium, rapid pulse, and signs of intense intoxication. The patient may be admitted to hospital unconscious, with a normal or subnormal temperature, and, as in a case which was under my care at the Philadelphia Hospital, the autopsy alone revealing the true nature of the disease.

The following case may perhaps be regarded as an instance of the *febris tuberculosa peracuta*. The striking features were the existence of a local tuberculous adenitis in the group of left cervical lymph-glands; a miliary tuberculosis of very moderate intensity in the liver and spleen; and a clinical picture of the most profound toxemia.

Joseph S., aged forty-seven, a shoemaker, was admitted to Johns Hopkins Hospital, March 13, 1893, with a swelling in the left side of the neck, cough, loss of appetite, and delirium.

Nothing very definite could be learned about the family history. The patient was married and had six living children. His wife stated that he had had a cough the summer previously for about two weeks, and that he had not been very strong all winter, and had complained at times of pains in the abdomen. He had occasionally had chills and fever and had sweated very much. The existing illness had begun five or six weeks before, with chilly feelings and loss of appetite. About a week later it was noticed that the glands on the left side of the neck were swollen. The man continued at work, however, until three weeks before presenting himself. He had neither nausea nor vomiting, but there was loss of appetite and progressive weakness and fever. For fully two weeks he had been irrational, and at night quite delirious. The chief complaint had been the feeling of profound weakness, and for more than ten days he had been confined to bed, too feeble to walk.

On admission the patient looked very ill; the temperature was 102.7°, and rose by 6 P.M. to 105°. Throughout the day before the temperature had ranged from 103° to 105°, and the man had been delirious. The patient was a fairly well nourished man, and did not look as if he had been ill for any great length of time. The complexion was pale, but the lips and mucous membranes were of fairly good color. The pupils were of medium size, and reacted to light; there was no strabismus. The tongue had a thick, yellow coating. The pulse was rapid, 124, regular, but soft, and the radials compressible. The respirations were a little hurried, 36 to the minute, but the man did not show any marked respiratory distress, and lay comfortably with his head low.

On the left side of the neck behind the angle of the jaw, and in the lower triangle the lymph-glands were moderately enlarged, hard, and not painful. The largest was about the size of a horse-chestnut. There were no other lymphatic enlargements.

The chest was symmetrical, the expansion equal, and there was no change on percussion; the respiration was everywhere clear, with the exception of a few sibilant râles at the bases. The expectoration was muco-purulent, small in amount, slightly blood-stained, and repeated examination failed to discover the presence of

[1] De la Tuberculose chez les Enfants. Paris, 1892.

tubercle-bacilli. The heart-sounds were normal and there was no increase in the cardiac dulness.

The abdomen was symmetrical, full, and generally tympanitic. The patient had five movements of the bowels in the first thirty-six hours after admission. They were soft, but not in any way distinctive. The edge of the spleen could be easily felt and extended three fingers' breadth below the costal margin. The urine was dark reddish-brown in color; 660 c.c. were voided in the twenty-four hours, containing a small quantity of albumin and a few granular and hyaline casts. There was a decided diazo-reaction. The patient was irrational and frequently spoke in an irrelevant manner.

On the 15th, two days after admission, the patient was shown at the clinic, and I extract the following remarks from the report of my stenographer. "As to the nature of this interesting case, from the appearance of the man and the history you would think at once of typhoid fever, though the temperature-chart is unlike this disease in the fourth or fifth week. Still the general features, the enlarged spleen, the diazo-reaction, and the negative condition of the examination render this diagnosis highly suggestive. Against this, however, there are several important objections. The temperature-range, as I mentioned, is more continuous than is usual in typhoid fever at this stage. The abdominal symptoms are slight, and there are no rose-spots, though it is true the spleen shows marked enlargement. Bronchitis is not an infrequent complication of typhoid, and at the bases it is of course common to have diffuse râles. A feature that suggests another diagnosis is the enlargement of the lymph-glands on the left side of the neck, which has increased during the patient's illness. There can be no question that the enlargement here has nothing whatever to do with the ordinary swelling of the salivary glands seen in typhoid fever. Here the affection is evidently in the lympathic glands, and this important fact, with the protracted fever, the delirium, and the enlargement of the spleen, suggests rather that the patient has acute tuberculosis. Two other points of interest may be mentioned. The blood-count shows a marked diminution in the number of leukocytes, only 2000 per c.mm. being present, which is, however, rather against tuberculosis. There is no optic neuritis, and there are no tubercles in the choroid."

The critical condition of this patient continued throughout the 16th and 17th. The temperature ranged from 103° to 105°, rarely falling below 103.5°. The pulse became more rapid, from 140 to 160; the abdomen became distended; the respirations very shallow and rapid; and the patient died early on the morning of the 18th.

REPORT OF THE AUTOPSY (by Dr. Flexner).—Punctiform hemorrhages were found on the skin of the shoulders and neck, and subcutaneous hemorrhage at the back of the neck on the right side, as also hemorrhages in the subcutaneous fat in several situations. The muscles were of a deep-red color. The peritoneum was smooth; the diaphragm on the right side was at the fifth rib, on the left side at the upper margin of the sixth rib.

Both layers of the pleura were united by old adhesions, some of which were pigmented. The lungs themselves were crepitant and deeply pigmented; the lower lobes were congested, and, on section, serum and blood escaped. The bronchi contained frothy mucus. Along the posterior edge of the right lung the pleura was greatly thickened, measuring 3 mm. in thickness. Beneath it the lung was pigmented. The lower lobe of the right lung presented areas of fresh consolidation, and the pleura was covered with fresh, granular fibrin. On section the lung was deep grayish-red in color, and portions excised sank in water. The heart weighed 270 grams. The pericardium was smooth, the valves normal. The heart-muscle was soft and somewhat friable. The liver weighed 2850 grams; the surface was smooth, and there were whitish and whitish-yellow miliary tubercles beneath the capsule, irregularly scattered and not in great numbers. The spleen weighed 500 grams; the section was dark-red in color; the brown pulp was abundant, and there were numerous large tubercles in its substance. The kidneys presented a few atrophic patches in the cortex; the striæ were coarse and pale; the consistence a little firm. There was nothing of special note in the pharynx, stomach, or esophagus. Peyer's patches were a little swollen; the mucous membrane of the intestines was somewhat congested. The appendix vermiformis was obliterated.

On the left side of the neck a mass of tuberculous glands extended from the angle of the jaw to the clavicle. Some of them were closely adherent to the veins in the locality. On section they were yellow and caseous. The group of glands above the clavicle, and the mediastinal glands also, contained caseous tubercles. The bronchial glands were enlarged, deeply pigmented, edematous, but there were no tubercles visible to the naked eye.

On microscopic examination of the solid areas of the lung no tubercles were to be seen. There were numbers of diplococci, with distinct and easily-staining capsules, obtained from the lung on cover-slips. Cultures made from the lung, spleen, and kidneys remained sterile.

The groups of enlarged lymphatic glands in the neck in this case really led to the correct diagnosis. The general condition and appearance of the patient were those of the most severe typhoid fever, though, as I remarked to the class, the fever was rather more persistent and higher than is usual in typhoid fever. The amount of tuberculous infection throughout the body was in reality slight. The tubercles were not numerous in the liver and were only moderately numerous in the spleen. There was no pulmonary tuberculosis and the serous surfaces were not involved. The pneumonia in the lower lobe of the right lung was not extensive, seemed fresh, and evidently had developed within a few days of the patient's death.

A REMARKABLY DISTENDED BLADDER.

BY H. S. COCRAM, M.D.,
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GYNECOLOGIST TO THE CHARITY HOSPITAL.

SOME months ago an Italian woman, thirty years of age, a multipara, presented herself in the gynecologic clinic of the Charity Hospital, suffering with an abdominal tumor about the size of a nine months' utero-gestation. The swelling was perfectly symmetrical, extending in the median line within an inch of the ensiform

cartilage and touching the ribs on either side for a distance of several inches. She stated that her menses had stopped four months previously, but that the tumor had only commenced to grow six weeks before, and had been in its present condition one month. Her general condition was much below normal; the face wore an expression of great pain and anxiety; respiration was rapid, the pulse quickened and thready, and there was abdominal tenderness, with constant elevation of temperature, especially marked in the evening. She passed a small quantity of urine at irregular intervals, but on the slightest exertion was unable to retain it. Any change of position would cause an unexpected flow of urine mixed with blood and mucus. On examination the mucous membrane of the vaginal canal was found to be so edematous that its folds protruded at least an inch out of the vulva. The cervix was reached with much difficulty and found to be situated in the anterior cul-de-sac, pointing upward and backward. It was soft, much congested, and of a bluish tinge. At the junction of the cervix with the body of the uterus there was a marked retroflexion, the fundus extending downward and backward, reaching within an inch and a half of the anus. Passing one finger in the rectum the other in the vaginal canal, ballottement was well marked. The uterus was of the size of that of a four months' pregnancy. During the examination the patient passed a large quantity of decomposing urine. A catheter was introduced in the bladder, and about one pint of urine withdrawn, when it ceased to flow. The pain was so great that an anesthetic was administered, the legs flexed on the abdomen and the tumor pushed well down. The edema of the vaginal canal was so great that nothing definite could be ascertained by touch through the anterior cul-de-sac, except that the tumor was fluctuating, with apparently thin walls. An exploring needle was introduced just below the umbilicus, and a dark-colored fluid drawn off, with a decided urinous odor.

A large glass catheter was now passed six inches in the bladder. There was a rapid flow of urine, with a synchronous decrease in the size of the tumor that cleared up the diagnosis at once. In one week she was able to pass her urine at will and the uterus had risen to almost a normal position, with every indication of a continuance of pregnancy to full term. Ten days later her temperature suddenly rose to 103°, the abdomen became tense, and vesical tenesmus was so great as to require an anodyne. The small quantity of urine passed at short intervals was mixed with blood and mucus. In attempting to catheterize her it was noticed that the urethral canal was completely occluded. The obstruction was gradually withdrawn, as far as practical, and cut off, the pedicle being pushed back into the bladder. Two days later the remaining portion became detached and was expelled. It proved to be the entire mucous membrane of the bladder which had sloughed off. The openings of the ureters were well-marked.

The distressing symptoms gradually subsided, and in a month after her admission to the hospital she was discharged apparently in perfect health. Several weeks after her departure a miscarriage was produced by an accidental fall from a wagon. The patient was seen at intervals after leaving the hospital, and she suffered no inconvenience whatever from her former bladder-trouble. The two most remarkable features of this case were the great distention of the bladder, without rupture, and the subsequent exfoliation of the entire mucous lining, with absolute recovery, the functions of the organ being completely restored.

17 BARONNE STREET.

MEDICAL PROGRESS.

External Urethrotomy followed by Septic Arthritis.—At a recent meeting of the Orleans Parish Medical Society, FENNER reported the case of a man, twenty-one years old, who came under observation suffering from urethral stricture. He passed his urine with straining and in a very small stream. This condition had been noticed for three months, and had grown progressively worse. A filiform bougie was introduced, with the intention of passing a Gouley sound. The whalebone was old and defective, and, slipping from the grasp of the assistant who held it, was doubled upon itself by the sound and broke off in the urethra. External urethrotomy was now performed, the whalebone extracted, and the whole canal was dilated with steel sounds. Considerable traumatism was inflicted upon the penile portion in this operation. The patient was put to bed, and in the evening his temperature was 101°. For nine days the temperature ranged between 99° and 100°, when it rose to 103°. From this time it remained for eleven days very high, but irregular, owing to the use of antipyretics. On one day the thermometer registered 105.5°, and on another it was again above 105°. On the nineteenth day the man was transferred to a medical ward, on the suspicion of enteric fever. From the day after the operation he complained of pain in the urethra and perineum, but no sign of a phlegmon could be discovered, and the urine was only slightly tinged with mucus. With the advent of the high fever came intense lumbar pain, with some tympanites and tenderness over the abdomen. The man remained in the medical ward for thirteen days, during which there developed an arthritis at the left wrist and at the right knee and elbow. The temperature now ranged between 99° and 102°, generally being about 100°. The condition was one of general sepsis. Abscesses formed and were opened on the shin below the inflamed knee, and in the axillæ. From the right elbow and knee fluid was removed with the aspirator, and in this was found a considerable amount of pus. The joints were immobilized with plaster casts, and in the case of the knee an ice-bag was kept applied for three days before the plaster was applied. In addition to these serious joint-troubles a profuse watery diarrhea for a time complicated the course of the case. Thereafter the man began steadily to improve.

Obstetrics Among the Negroes.—At the recent Pan-American Medical Congress DE SAUSSURE (*American Journal of Obstetrics*, November, 1893, p. 717) read an interesting paper in the Section of Obstetrics upon "Obstetrics among the Negroes of South Carolina." Considerable difficulty was encountered in obtaining exact information, on account of the indifference of the negro as to time and figures. It was found that menstrual life began at the age of 13.1 years. The negro is

not virtuous, and matures early. The average age for the menopause was 48.8 years, though in instances women have been delivered at the age of 53 years. Amenorrhea, dysmenorrhea, and uterine hemorrhage are extremely rare. The negro is more fruitful than the white, the average number of children to the family being 6.8, although for several years past the negro has been shirking his responsibility and taking means to prevent the increase of his family, so that within a few years it is possible that the number of children will be less than 6. With the negro pregnancy is physiologic, not pathologic. Eclampsia is not unusual, and may find its explanation in poverty and anemia or in the imitation of so-called civilized habits of the whites. The induction of abortion before the fifth month is becoming quite common, and is accomplished not by instruments but by drugs. If the abortion occur not later than the fifth month, neither midwife nor physician is called. Notwithstanding the great frequency of abortion, puerperal fever or septicemia is extremely rare. This may be accounted for by the fact that vaginal examinations are seldom made and instruments almost never employed. Syphilis is extremely common among the negroes of the South, at least 70 per cent. having inherited or acquired the disease. The pelvic diameters are larger than in the whites. Labor is a simple act, the physician rarely being called, nine-tenths of the deliveries being accomplished by midwives. Vaginal examinations are not made, and labor almost always terminates without accident, notwithstanding the unfavorable surroundings of the parturient. Among 15,538 deliveries there have been 57 deaths from puerperal infection, including cases of peritonitis, in spite of the fact that the dirt and filth among the negroes is almost inconceivable.

The Relation between Ametropia and Epilepsy.—At a recent meeting of the Ophthalmologic Society of the United Kingdom, DODD (*British Medical Journal*, No. 1713, p. 947) reported the outcome of comparative observations upon the refractive conditions present in 100 epileptics and 50 healthy persons. The observations included examination of the pupils and fundus oculi; the determination of the vision and refraction before and after mydriasis; and the result of treatment by glasses. The comparison showed that of simple hypermetropia there were 28 per cent. less in the epileptic than in the apparently normal class; of astigmatism there were 26 per cent. more in the epileptic division than in the normal one, the amount being made up mainly of compound hypermetropic astigmatism. Of the 100 consecutive cases of epilepsy, 75 were directed to wear glasses. Of this number 23 did not wear them or failed to return. Of the remaining 52, 13 after wearing the glasses for periods varying from one to two months had no attacks; 3 remained in *statu quo;* in 36 the condition had improved after wearing the glasses, the improvement in the majority being marked. In all cases the ordinary treatment had been continued. The inferences drawn are that, given a certain condition of instability of the nervous system, errors of refraction may excite epileptic attacks, and that the correction of errors of refraction, in combination with other treatment, will in many cases cure or relieve the epileptic condition; although in some cases the epilepsy will continue after the refractive error has been corrected, generally in a modified form in consequence of other irritation, even though the refractive error may have been the exciting cause of the epilepsy.

Twenty Cases of Hydatid Disease.—PUKY (*Ungar. Arch. f. Med.*, 1893, i, H. 5, 6; *Centralbl. f. die med. Wissensch.*, 1893, No. 42, p. 695) has reported the results of a study of twenty cases of hydatid disease in which he has operated. These were distributed among eleven males and nine females. Of the former the youngest was eighteen years old, the oldest forty seven; of the latter the youngest was likewise eighteen, the oldest sixty-six. Only four of the whole number terminated fatally. Of these one was a patient in whom the diagnosis was not clear and antisepsis was defective, death resulting from pyemia. In two cases death resulted from pyo-pneumothorax. In the fourth the disease was seated in the liver, in the abdominal cavity, in the kidneys, in the spleen, and in the lungs, and death resulted from repeated hemoptysis. In the remainder recovery ensued without complication. In all of these the possibility was demonstrated of closing the peritoneal cavity so thoroughly (by means of a suture recommended by Max Müller) that not a drop of the cyst-fluid entered. In none of these cases did peritonitis develop, and tenderness was not observed in or adjacent to the wound. The fluid evacuated from the cysts was in some cases perfectly clear, and in some contained a number of larger or smaller vesicles. In other cases the cyst was removed entire. As a rule the patients were able to leave their beds ten or twelve days after operation. At the end of this time the dressing was changed but once a day.

Cyanosis from a Patulous Foramen Ovale in an Adult.—PIC (*Prov. Méd.*, June 17, 1893; *Centralbl. f. klin. Med.*, 1893, No. 43, p. 923) reports the case of a man, forty-two years old, in which, following an attack of pneumonia, intense cyanosis developed, which disappeared in a short time, to reappear at irregular intervals, usually after exposure to cold. The patient came under observation in such an attack of cyanosis. The lower extremities were edematous, and blowing systolic murmurs could be heard over all of the valvular orifices, the point of maximum intensity being at the ensiform cartilage. The patient grew rapidly worse, and succumbed to an intercurrent attack of pneumonia. Upon post-mortem examination, in addition to the pulmonary condition, the left ventricle was found hypertrophied, the right ventricle and the right auricle dilated and hypertrpohied, the tricuspid valve incompetent, and the duct of Botal patulous, readily permitting the passage of the little finger. It is pointed out that perviousness of the foramen ovale may be either absolutely latent or attended with congenital cyanosis, or with cyanosis late in life. Under the conditions last named, it is probable that the duct had not perfectly closed, and that undue pressure within the right auricle has led to the entrance of venous blood into the left auricle.

The Etiology of Scorbutus.—BABES (*Deutsche medicinische Wochenschrift*, 1893, No. 43, p. 1035) has succeeded in isolating from the gums in two patients with

scorbutus, a slightly curved bacillus, 3 μ long, 0.3 μ thick, and pointed at the extremities. In two rabbits inoculated with proper precautions with an emulsion of a bit of the affected tissue, hemorrhagic extravasations took place in various parts of the body. The organisms could not be found in the blood or in the other fluids of the body. They were usually found in association with streptococci, and it was only by first treating the culture-medium with streptococci and then sterilizing it that the bacilli could be isolated. Inoculation of animals with pure cultures of the organisms in large quantities gave rise to abscess-formation and subcutaneous and subserous hemorrhage, and was followed by death, although dissemination of the bacilli could not be demonstrated. The opinion is expressed that the organism found is one of those ordinarily present in the mouth, and that in states of depression and privation it finds the conditions favorable for its vegetation. Its detrimental action is thought to be due to the generation of an agent that exerts a poisonous influence upon the bloodvessels and the blood-corpuscles.

Sudden Death from Pulmonary Hemorrhage in a Young Child.—HOWARD (*Archives of Pediatrics*, vol. x, No. 11, p. 940) has reported the case of a girl, two years and ten months old, with a good family history, who had been "delicate," but had escaped the usual diseases of childhood. Three days before death examination disclosed the existence of condensation over the central portion of the left lung. There was some cough, fever, and dyspnea, but no expectoration, and the child seemed comfortable and continued to play in the open air. Death suddenly took place at night from pulmonary hemorrhage. Post-mortem examination disclosed the existence of primary caseous tuberculosis of the bronchial glands, with calcification, and secondary chronic tuberculous pneumonia in the left lung, with cavity-formation. The hemorrhage had taken place from the rupture of a large vessel in the cavity in the lung. The bronchi and air-vesicles of the right lung were filled with aspirated blood. The mesenteric glands were enlarged, and on section several proved to be the seat of miliary and caseous tuberculosis. The spleen presented a condition of acute miliary tuberculosis.

A Case of Poisoning with Kerosene Oil.—MORTON (*Indian Medical Record*, vol. v, No. 7, p. 222) has reported the case of an old man, under observation for insanity, who in a fit of temporary mania swallowed "half a bottle" of kerosene, and immediately afterward took two ounces of ammonium carbonate. When seen, two hours after the accident, the patient was in collapse. His lips were blue and his face generally cyanosed. The pupils were dilated, and there was complaint of great difficulty in swallowing. A good deal of blood had been vomited and coughed up. Bismuth and soda were administered and warmth was applied to the body. For some days the dysphagia continued, with a sense of rawness of the throat. The food, given in teaspoonful quantities, was occasionally vomited. At no time was there diarrhea. For a week after the accident the urine was passed in small quantities. A month elapsed before recovery was complete. Lozenges of cocain afforded relief from the dysphagia.

THERAPEUTIC NOTES.

A Case of Peritonitis Cured by an Injection of Camphorated Naphthol.—At a recent meeting of the Société Médicale des Hôpitaux, RENDU (*Le Mercredi Médical*, 1893, No. 44, p. 531) presented a woman who was greatly emaciated when she came under observation, with the abdomen greatly distended and accumulations of fluid in both pleural cavities, and the physical signs of pulmonary tuberculosis. The affection had set in with digestive derangement, and was attended with alternate diarrhea and constipation. After eight or ten days of observation some seven quarts of fluid were removed from the peritoneal cavity, and between two drams and two drams and a half of camphorated naphthol were injected and permitted to remain. Slight febrile reaction followed, but this soon subsided. The effusion did not recur, but a hard mass formed which gradually disappeared. The pleural effusions also disappeared, the patient increased in weight, and perfect recovery ultimately ensued.

For Offensive Breath.—

℞.—Tinct. myrrhæ, Tinct. lavandulæ . . āā 12.
Glycerin., Liq. sodæ chloratæ . . āā 30.
Infus. salviæ . . . . . 250.—M.
S.—Use as a gargle.

℞.—Thymol. 0.3
Ol. menthæ 0.5
Ol. caryophylli . . . . 1.
Tinct. rhataniæ . . . . 10.
Spt. cochlear. . . . . 30.—M.
S.—Gtt. x in a glass of water as a gargle.

Corr.-bl. f. Schw. Aerzte.

Caffein Sodio-Sulfate.—With a view of neutralizing the contraction of the bloodvessels that follows the administration of caffein, and thus to augment the diuretic action, HEINZ and LIEBRECHT (*Berliner klinische Wochenschrift*, No. 43, p. 1059) have succeeded in preparing a double salt, the sodio-sulfate, which, in doses of fifteen grains four times a day, they have found to induce diuresis without any ulterior influence upon the circulation, appetite, or digestion. The drug has rather a bitter taste, and is best given in capsules. Lithium and strontium salts have been prepared, in addition to the sodium combination.

For the Relief of Sterility.—BUMM (*Deutsche medicin. Wochenschrift*, 1893, No. 41, p. 1003) has reported a case of sterility in which he afforded relief by massage of the entire uterus, particularly of the cornua, and of the mucous membrane of the cervix, by means of the sound. He recommends the method in cases in which no profound pathologic change exists.

For Whooping-cough BERGEON recommends rectal injections of carbon dioxid, in volumes of a quart or two quarts, given not earlier than three hours after the taking of food, and repeated at intervals of not less than four hours, in accordance with the intensity of the paroxysms. —*Münch. med. Wochenschr.*, No. 44.

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WHAT IS LIFE?

FOR a long time the materialists have been having matters much their own way. With fine impertinence they have affected to consider "science" as pertaining only to things physical, and all the phenomena of living things as readily explained by purely physical forces. There have been such flooding breakers of new knowledge pertaining to the material world that the noses and mouths of all but the best swimmers have been filled with over-much undrinkable sea-water. Now, however, we are beginning to wade on the solid earth of systematized knowledge, and are coughing out the bitterness of our emphatic protest.

It has been the fashion of physiologists—they who deal especially with life—to deny its existence! to jeer at the idea that the heart is anything more than a pump, that all secretion and excretion are osmosis (and osmosis is nothing but the action of capillary and physical forces), that all living functions are purely chemic, and that life itself is explainable in terms of mechanics. Nothing was so vehemently laughed at and even spit upon as the atrocious idea of a vital force.

Back of this dramatic contempt lay the logical creed of atheism and bald materialism. In popular "scientific" writings and periodicals and in the multitudinous plebifications of science—with a capital S—it became common to hear much of the "reign of adamantine and unalterable law," deftly varied with sneers at the mistakes of "Nature," the number of atrophied or useless organs of the body, the stupidity of the God of the special creationists and of the believers who could outfit upright-standing man with such a ridiculous mechanism or lack of mechanism as that of the venous valves—*et cetera, ad nauseam et ad infinitum!* The denial of the metaphysical had to be supplemented by the proof of dunderheadedness on the part of the supposititious metaphysical. The inference was clear that no intelligence whatever is far better than the stupid one that could leave "as many as six useless tubes in the abdominal cavity."

In a late number of the *Fortnightly Review* we find an article by an English professor of chemistry that has been extensively copied, and that well illustrates the same noteworthy puerility of logic and prejudice. The article is a good *résumé* of the progress made by chemists in reproducing synthetically quite a large number of "organic" compounds. In order to illustrate the gloating pleasure with which a few simple and insignificant facts are illogically wrenched and forced into the service and rôle of materialism, we quote a characteristic passage from Professor THORPE's article:

> "That particular day in 1828, when Wöhler first observed the transformation of ammonium cyanate into urea should be accounted a red-letter day in the history of science. This discovery virtually gave the death-blow to the notion that the operations which are concerned in the formation of the chemical products of the organic world are fundamentally different from those which take place in the inorganic world. Urea, as a final product of a series of tissue-changes, is preëminently a typical product of animal life: no more characteristic example of a substance formed by the action of the so-called *vital force* could possibly be adduced. By demonstrating that urea can be made synthetically by ordinary laboratory processes and from substances inorganic in their origin, Wöhler proved that vital force is only another name for chemical action; and that an animal is nothing but a laboratory in which a multitude of chemical changes, similar to those which occur in our test-tubes and controlled by essentially the same conditions, is continually taking place."

This remarkable "scientist" and more remarkable "logician" seems not to suspect that his facts knock his theory into infinite and utter smithereens. He would hardly deny that the glorious synthetic chemist, in making these few poor end-products of vital katabolism, was possessed of and did verily exercise marvellous intelligence in his work. The

article, indeed, sings the praises of the almost divine ingenuity required to make, *e. g.*—urea! To "chemical action" alone is ascribed the synthetic product, and the chemist's action is left out of the count. But it would seem that the chemist's intelligence had something to do with the affair! Well, then! Is not the logical conclusion from this more plain than the biggest nose on the smallest face that to make the amazingly complex anabolic products of living tissues requires a wee bit of intelligence also? The argument is designed to degrade all vital processes to the level of mechanic forces, but to an ordinary unscientific observer it seems to demand of the creator of living tissues of astounding and unimagined complexity a proportioned intelligence of awful and unfathomable degree. If some one of Professor THORPE's brother-chemists should succeed in making protoplasm synthetically, how justly profound would be Professor THORPE's admiration of him! If he should succeed in making artificially a ganglionic center, or a whole nervous system, or a self-motile, living organism even of a low order, how limitless would be the veneration of all of us! But, if we remember rightly, there is a chemist who makes protoplasm easily, and who fills the earth with a million varieties of palpitant beautiful organisms. The old name for this wonderful chemist was GOD; the name given Him by the scientists is Nature—sometimes with a capital N, sometimes without. Caught in the crux of the illogical absurdity we have suggested, the scientist has found himself in an unenviable predicament. If, according to Huxleian logic, thought and consciousness are the products solely of molecular changes in the brain, then right and wrong and freedom and religion disappear in the exceptionless laws of the conservation of energy and of rigid necessity.

It is gratifying to note that medical science is quite the first to break through this truly unscientific dogmatism, and to recognize that science pertains to psychologic and metaphysic facts, as well as to material facts, and moreover to acknowledge the logical inductions from physiologic facts, even though they are wholly intolerable and unexplainable. Thus, in EWALD'S *Diseases of the Stomach*, the learned author says:

"Unfortunately we are now nearly everywhere compelled to assume a specific yet absolutely unknown activity of the living cell.

"It is positively demonstrated that the mechanical processes of filtration and diffusion do not suffice to explain secretion, and we must accept the existence of a peculiar activity of the cells.

"Sections of the heart [after all its nerves have been divided] that contain no ganglion-cells continue to beat rhythmically.

"Muscles may both make spontaneous movements, and may also lengthen upon 'stimulation.'

. . . "the unpleasant fact that we know very little about the secretion, absorption, and motility of the stomach. The study of the organ has been undertaken with too many physical propositions, whereas here, as in the digestive tract, biological laws are more important."

In HALLIBURTON'S *Handbook of Chemical Physiology and Pathology* we read:

"The chemical operations performed by the living cell cannot be imitated in the laboratory or explained by any known chemical laws."

At the recent largely attended meeting of the Section on Biology of the British Medical Association Dr. J. S. HALDANE reviewed the progress of physiology during the last fifty years, and showed that the physical and chemic theories as to the nature of life had utterly failed as working hypotheses, and that the vitalistic theory must henceforth be made the scientific working hypothesis.

The same admission is, very grudgingly indeed, but still completely, made by Prof. BURDON SANDERSON in his address before the British Medical Association:

"Mind must be regarded as one of the 'specific energies' of the organism, and should on that ground be included in the subject-matter of physiology.

"If on the one hand protoplasm is the basis of life, on the other, life is the basis of protoplasm."

Then comes the splendid summary of the whole matter by that consummate investigator and master, LIONEL BEALE, Professor of the Principles and Practice of Medicine at King's College, London. We would like to quote the entire address recently delivered at the opening of the course on medicine, but are compelled to restrict ourselves to only a few paragraphs:

"More careful study of the chemical and physical molecular changes and of the circumstances under which they occur will, I think, convince the mind that something far transcending any physical changes and of a different order or nature is requisite before any adequate explanation concerning the simplest life phenomena will be afforded. The more we know about the non-living, the wider and deeper becomes the gulf by which it is and has been separated from the living. In all these physical and chemical hypotheses of life, where is the evidence of progress?

"It seems to me that the evidence in favor of the absolute separation between the living and the non-living

state is conclusive beyond question, whilst every attempt to prove the contrary—that the living and non-living are one, or that the non-living gradually passes into the living state—has signally failed. The nature of life has not been and cannot be demonstrated, but that life-power belongs to a category far removed from that in which every form of energy, of chemical action and of atomic machinery would be placed seems to me to be abundantly proved by scientific observation and experiment.

"The hiatus has not been bridged and cannot be bridged even in thought at this time. The difference remains absolute, not gradational. Most of the arguments of the scientific kind against belief in God may be traced to the primary belief in the assumption that the living and non-living are one, backed by ingenious speculations invented for the purpose of convincing people that the facts of life, as well as those of nature, living and non-living, have been explained by physics and chemistry. It has been argued that, since in matter there are inherent forces and powers adequate to account for all forms of life, the idea of a superintending, governing power is no longer needed to explain the facts familiar to us in living nature. But, so far from any such life-properties or powers having been proved to exist in any non-living matter whatever, the direct contrary remains true, at least up to this very day, and the advocates of the unity of life and non-life have been driven to take refuge in the further assertion that the tendency of thought of the time is in the direction they indicate. But tendencies are not scientific.

"Tendencies of thought, scientific prophecies, and the charming fairy tales of scientific story-tellers are for the delight of scientific childhood and may still be harmlessly enjoyed during the evolutionary period of machine development; but if we allow ourselves to be influenced by facts and reasons we must conclude that life is not a property of matter, that the living world and the non-living world are distinct, and that the former was not a natural outcome of the latter; that if all living things were destroyed the matter of their bodies and the matter of the non-living world would remain indestructible, but would also remain incapable of giving rise to new life; and that up to this day it has not been shown that fundamental religious beliefs have been shaken, destroyed or rendered untenable by the wonderful truths which have been established by the unprecedented progress of scientific discovery in every department of natural knowledge during our time."

PROFESSIONAL ATHLETICS AND EDUCATION.

SINCE our last issue another death from foot-ball has occurred, the young man having been injured October 11th. This makes five deaths in this country this season, still another being probable, the patient lying paralyzed, "with a chance of recovery." At the last Yale-Harvard "battle," "Big ACTON, of Harvard, to settle a dispute on the ground, caught BEARD on the jaw with a right-hander and brought him to earth beautifully." There was a storm of hisses, "but the occurrence was forgotten. Captain HINKEY, instead of thinking of fisticuffs, spent his time wrangling with the referee. His face was adorned with a few souvenirs of the Yale-U. P. game, when OSGOOD probably gave him enough fighting to last him for the balance of his foot-ball career." "THORNE'S nose was broken, and blood gushed from his nose and mouth, dyeing the front of his jacket a bright crimson." These selections are made from the report of the game as published by one of the best and most accurate New York newspapers.

During the past two weeks a wave of indignation and disgust has swept over the country at the travesty of athleticism and mockery of education revealed by the foot-ball disgrace. Almost all the great journals, lay and medical, have pronounced against it in the most unequivocal manner. From one point of view it is a disheartening fact that the reform of this abuse has sprung or is to spring from the healthy and sane good sense of physicians and of the people rather than from those whose duty it is to obviate and whose pride it should have been to control in advance such an abuse. From another standpoint it is gratifying to know that the people are better guides than their *ex officio* leaders. The pride of the country in its educational institutions, in their professors and governing boards has suffered at least a very severe strain, a positive loss of respect that only the most prompt, determined, and energetic action on their part can bring back again. *Puck* teaching educators their duty to education is a significant fact, and one not soon to be forgotten. It was a question, and a difficult one of solution, that of securing a block pavement about St. Paul's Cathedral. "You have only to put your heads together," said the witty Dean, "and the thing is done."

Nor can these gentlemen plead thoughtlessness. We could fill a whole issue of THE NEWS with accounts of the attempts that have been made to reform and the warnings that have been given, many of them by physicians and medical journals. We have received a large number of private letters from physicians bearing evidence of this. Among them we note one from DR. ROCHESTER, of Buffalo, who writes that it was the saying of Professor CHARLES ELIOT NORTON, of Harvard College, that base-ball is a game that would have delighted the Greeks, but that foot-ball is only fit for barbarians. Three years ago, also, DR. BURT G. WILDER gathered enough testimony to convince any cautious man of the baleful tendency. He attempted to get

subscriptions to pay off the debt of the Cornell Athletic Association on condition that what even then he termed "semi-professional college athletics" should be forbidden by the university.

Among the more recent and convincing warnings to which we would call attention is the result of the inquiry made by MR. WILLIAM ODELL, of Torquay, England, who recently addressed the question to the headquarters of some of the large public schools as to whether the boys who excel in athletics are as a rule also excellent in school-work, examinations, and the like. A similar inquiry made by a MR. CATHCART ten years ago elicited answers that were full of enthusiasm and unstinted praise of athletics. The replies to MR. ODELL'S questions are more reserved and critical. One correspondent answered that as a general and rarely broken rule, excellence in athletics and in intellectual work are not met with at the same time in the same person; another, that "the spirit of athleticism needs controlling." DR. HORNBY, of Eton, notes that "some years ago it was quite possible for a boy who had an aptitude for cricket or rowing to attain to the highest excellence, according to the standard of that day, in athletics and school-work. I doubt whether it is so now. Athletics of all kinds have become so developed and brought into a system, and, I may almost say, professional, that the time required for a very high excellence in them is, I think, a serious obstacle to a reading man or a studious boy's engaging in them with a view to athletic distinction. This is a serious evil in our day." And DR. PERCIVAL, of Rugby, says that "the great publicity given to athletics tends to give them an undue prominence in the minds of both boys and men."

THE COCHRAN CASE.

WE publish elsewhere the report of the two physicians appointed by the Government to examine into the mental condition of HENRY S. COCHRAN, who robbed the Philadelphia Mint. This report was made to the United States District Attorney, and seems to have been effectual in bringing the trial of the case to a speedy termination. COCHRAN'S lawyer made no defence of insanity, the prisoner's crime was quickly proved, and a verdict of guilty was promptly rendered by the jury, without leaving the box. It is hoped that the report will be equally effectual in silencing the unfounded assertions that have made their way into the medical as well as the lay press, that the criminal is insane. As no medico-legal contest was developed in the trial it is needless to say that we cannot present a medico-legal report, as we stated in our last issue that it was our intention to do. We desire, however, in view of the medico-legal interest excited in the case, to take some notice of its main features.

COCHRAN is sixty-seven years of age and had been an employé in the Mint for forty-three years. His duties during most or all of that time were those of a weigher, a position in which it is absolutely necessary to rely to some extent upon human honesty. He had charge of the vault in which was stored many millions of dollars' worth of gold bullion in bars. This vault, however, was sealed and had been so for some years. The old weigher took his first bar several years ago; he was enabled to secure it without disturbing the seals, because of some defective construction of the vault. There is reason to believe that he was in some financial difficulty at the time and needed money. He was, moreover, dissatisfied with the amount of his salary, which, considering his responsibility, was small. In order to realize on the bars without being detected he melted them down in a crucible in a third-story room of his residence in Darby, and sent the crude metal thus obtained back to the Mint by express, and thus received the profits of its sale. This, in brief, is the story of his systematic and long-continued stealing.

The detection of COCHRAN'S crime followed as a matter of course when the vault was opened for the purpose of coining the gold. It required no feat of expert detective work; neither was it the result of weak-mindedness in the weigher. When orders to open the vault were sent from Washington during the recent financial stringency, COCHRAN immediately began to betray uneasiness. He expostulated, and plead especially that the vault was the best storage place in the Mint, and that it would be a pity to empty it. He even visited Washington and attempted to influence the Director of the Mint, cunningly saying, however, that his visit to the capital was to look after his political safety, which he feared was jeopardized by the change of administrations. There was no evidence of dementia, but merely of a guilty conscience, in this visit. When at last detection appeared certain he secreted a further number of gold bars in a space above the vault. His object in doing this is not clear, but it is supposed that it had reference to some belief or

desperate hope of the criminal that it would divert suspicion from himself, or at least help to implicate others, and thus enable him to make terms.

In his house at Darby COCHRAN had several ingeniously constructed secret drawers and safes. One of these was made many years ago by the village carpenter for the perfectly legitimate use of storing some family silver. Another was a rudely-constructed, but inaccessible, hiding-place for a small iron safe. After his confession he revealed these places, which contained most of what was left of his pelf. A so-called secret passage-way under ground, leading from the house to the street, which was sensationally described by the newspapers, was simply a vaulted drain. It had no significance or criminal use whatever.

COCHRAN'S house, in which he lived alone, was an old-fashioned, rather large dwelling, with nothing remarkable in it but the accumulation of a lot of nearly useless and almost valueless rubbish. The only significant things in the house were a crucible and melter's tools, taken from the Mint, and a stove and some other appurtenances such as counterfeiters use. These were in a third-story room, in which was a carpenter's bench, tools, etc. These accumulations, about which much was said in the newspapers, consisted of old hats, shoes, umbrellas, and neckties in superabundance; a box of razors—one for every day in the month; and a collection of cheap books, such as are written for boys. Conspicuous among the latter were bibles and hymnals. In the work-room was a pile of iron match-safes after a pattern invented by the weigher; also a large pair of discarded scales, which he had purchased from the Mint.

Personally COCHRAN was a man of very regular habits. He never drank alcoholic liquors, used no tobacco, and contrary to what was hinted in the newspapers, lived a perfectly moral life as far as is known. He was a church-member, a generous giver, popular with children, and generally liked by his acquaintances. His health had always been good, and before his crime he had never been suspected of any mental aberration. Physically he is large and healthy, with no more marks of senility than can be found in the majority of men of his age.

As is shown by the official report of the examining physicians, COCHRAN presents none of the mental or physical signs either of paresis or of senile dementia. His memory is good, his mental reflexes active and sure, his thoughts coherent, and he has neither delusion nor hallucination. He is thoroughly aware of the moral quality of the act and of its consequences. He has none of the signs, such as defects of articulation, tremor of the facial muscles, involvement of internal or external ocular muscles, or of the optic nerve, which it was confidently predicted by some that he would be shown to have.

Upon this very plain and simple, but most deplorable, case of temptation, weakness, and crime, a theory of insanity of the most elaborate structure has been built in some quarters, with the aid of newspaper reporters and voluble physicians. We noticed this aspect sufficiently in our last issue, and publish this rather brief summary of the case merely to show that it is one of common stealing, without any medico-legal bearings of interest or importance.

EDITORIAL COMMENTS.

A Remarkable Remedy for Remarkable Diseases.—We cannot forbear allusion in the most lenient and amused spirit to an interesting specimen of *English as she are translated into* that comes to our notice in the shape of a circular descriptive of a French pharmaceutic preparation, "a coal-tar product" of marvellous efficacy for some forms of disease that may be new to our readers. There are four octavo pages of recommendations; we can only cite a few—the syntax and capitalization being those of the circular:

"In the opinion of the Dr. Bouchut, the best topic into the BUFFY ANGINA consists to employ douches into the pharynx. Since ten years I do not use other means at the hospital; the patient child opens his mouth, inclining himself, with a basin under his chin, and the liquid, injected with strength, go out, without never to penetrate by the windpipe." We suppose the "gastric tube" of the French child must be absolutely without twist or turn from beginning to end. Dr. Dupont also recommends the preparation especially "for to be UNDERSKELTER OF THE INFECTION," and Dr. Lorrain is especially pleased with it "for the disinfection of the woman confined in the preventive against the consecutive accidents at the deliveries." Dr. Bazin finds it "an excellent mean of fortifying the scalp." For this purpose he "had prescribed ordinary some lotions with the acid of one little imbibed sponge extended with 3 at 6 parts of tepid water or water at the bran." "Into the ulcerous affections of the gums the emulsion is possessing one special efficacity for CONSOLIDATING THE BARED TEETH, destroying the leavens or animalcula what often unwrap itself in these organs," etc. For "the TOILED OF THE NURSLINGS," for "THE VETERINARY MEDICINE," "INTO THE LEUCORRHEA (wite flowers)," for "CRUSTS AT THE HEAD," etc., the good "Emulsion at the 30th, 40th, and 50th," are alike efficacious, employed "into the eyes, the eyelids, the buccal and vulvary gangrene, the fluent hemorrhoids," etc. This caution is wisely added: "The seat and the nature of the lesions as so as the most or less great captiousness of the organs de-

mand in many circumstances the coaltar be added with unmingled water." "The EMULSION-MÈRE at the 5th shall be the starting post for the attenuation."

This matter of translating from one's native language into another without the faintest knowledge, and solely by the aid of a dictionary, has proved a source of unfailing amusement to many generations. If one knows French well one can trace every twist of the poor translator's mind. For example, one would be puzzled to understand the notices in our circular that "the Principal Stock Fort the Great Britain, is at etc., and Fort the United States," if one didn't remember that the French word *magasin* (warehouse or storage-depot) may have an English synonym in the dictionaries, *Fort* or *Fortress*.

The Treatment of Enteric Fever.—Apropos of the expression of regret, in the review (THE NEWS, November 18th, p. 586) of Dr. Yeo's *Clinical Therapeutics*, that a discussion of the value of cold baths in the treatment of enteric fever was not fully entered into, Dr. J. M. Deam, of New Carlisle, O., calls our attention to a method of treatment employed by him, and described in the September number of the *Columbus Medical Journal*, p. 105. The mode of procedure followed is to give all patients throughout the entire illness podophyllin in doses of quarter of a grain as frequently as may be necessary to change the color of the stools—first to green and afterward to the normal color observed in health. In addition the official solution of potassium arsenite is administered hourly in doses of half a drop. Further, hot alkaline sponge-baths are given twice a day, or oftener, the number being regulated by the effect upon the temperature and the nervous system. If colicky pains be present morphin is administered. "The diet is practically unrestricted, with the exception that milk is absolutely forbidden. The patient is never asked to take nourishment in any form, nor ever refused when he asks for it." About twenty-five cases have been submitted to the treatment outlined. The appetite was found to return in from six to eight days; the fever to be gone in from eight to ten days, and the patient to be up and about in from ten to twelve days. In his letter Dr. Deam expresses a readiness "at any time to demonstrate the truth of" his "theory in any hospital under the supervision of competent diagnosticians, so that no cavil may arise regarding the nature of the disease, as also its course and duration under" his "treatment." However great a degree of skepticism one may feel in a matter of this kind, the privilege is not given to condemn without experience that which another claims to have value.

Coroner Reform.—The propriety, if not the necessity, of the coroner being a man with a medical training, as well as with a judicial mind, received a rather ludicrous demonstration the other day in the city of Philadelphia. In a case in which the cause of death was uncertain, the attending physician had declined to issue a certificate; but the coroner's jury, no doubt upon and with the authority of the learned coroner, brought in a verdict of death from heart-disease complicated with senility, although the attending physician had stated in reply to an inquiry that during life no disease of the heart was recognizable. In the same city and in the office of the same coroner post-mortem examinations have been made, and the reports based upon an inquiry into the history of the case, perhaps also upon the opinion of the attending physician and upon a superficial view of the body, incision and further investigation not being deemed necessary by an official who knows practically little or nothing of anatomy and pathology, but who seems able and capable of assuming arbitrarily a good deal of authority. The remedy for a system so defective lies in making the office of coroner a non-partisan one, and filling it with a medical man.

The Richardson Memorial of the Medical Department of Tulane University, at New Orleans, is a gratifying evidence of medical progress. It was dedicated November 4th with appropriate services. It is a commodious and imposing structure of four stories, containing in all seventy-two rooms, located on Canal Street, between Villere and Robertson Streets. The main lecture hall is fifty-five feet square and twenty-eight feet high, seating four hundred students in opera chairs. The building is the gift of Mrs. Ida A. Slocomb, in memory of her husband, Dr. T. G. Richardson, who devoted thirty-one years of his life as professor in the medical faculty of the school. The planning and erection of the building has been under the supervision of Professor Souchon. Judging from the reports the building is the outcome of the most diligent thought and study as to the construction of medical college buildings. May the school labor to send forth her graduates with an educational outfitting worthy of the unselfishness of the donor and of the excellent mechanism she has provided.

Medical Illustrations and Obscene Literature.—We are not at all certain that there have not been in the past such errors in illustrating medical literature, or in advertising medical appliances and devices, such as posture-tables, that the mistakes have not been far more and worse than mere faults of taste. But, of course, we can have nothing but condemnation for any interpretation of the law, or for any legal proceedings, that would forbid or prevent the free passage through the mails of whatever may be justly called medical literature. We learn that an instance designed as "a test-case" has been submitted to Commissioner Fairchild for his decision. A special example might possibly be forbidden the service of the United States mails, but it is doubtful if any general rule could be made that would not be opposed to medical progress and unjust to the profession.

Vegetarianism and Physical Endurance.—In a recent pedestrian contest between Berlin and Vienna two vegetarians came out far ahead of their carnivorous competitors. This is an old lesson newly taught, but the modern man thinks he must have large quantities of animal flesh three times a day "to sustain his strength." It would seem that in this respect civilization is reverting to the habits and characteristics of the carnivora instead of progressing out of it. We suppose the scientists would say that if it were not for cooking we would have to re-develop our canine teeth, so called, into the olden *de facto* type.

"*The Misuse of Drugs in Modern Practice*" is the title of an instructive paper by Dr. John T. G. Nichols, of Cam-

bridge, Mass. (the annual discourse delivered in Boston before the Massachusetts Medical Society, June 14, 1893), which should be read, pondered over, and inwardly digested by the general physician.

CORRESPONDENCE.

THE TESTIMONY OF PHYSICIANS IN COURTS.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of July 29, 1893, you editorially speak of a new law recently passed in New York, which you regard as remarkably liberal toward that part of the medical profession which reaps benefit by its provisions. Your editorial is headed, "A New Procedure in Medical Testimony," on page 132 of THE NEWS.

I was struck with the evident surprise your language indicated at such unexpected liberality toward physicians by law-makers, even in the great and progressive State of New York.

I wish to say that Tennessee has for years had a statute of similar, but more universally applicable character, which shows to the profession eminent fairness in the matter of medical testimony other than in criminal cases. In this State a physician cannot be *compelled* to attend court *in person* except in criminal cases—though most of the doctors do not know this, and go when summoned. But the *law* permits—and I have taken its privilege for years—that a doctor may indorse upon a subpena that "he is a practising physician, and claims exemption from attendance at court in this case, and that his deposition shall be taken regularly out of court." This exempts his attendance, and puts the *attorneys* to the inconvenience *instead of the physicians*, placing upon plaintiffs the burden of getting up their evidence before the case is called, or hazarding the absence of the medical testimony, and a postponement of the case—as has frequently happened by reason of my own insistence of my rights under the law.

Now the workings of this law favor materially the physician, especially in small country towns where the necessities of general practice exact prompt and proper attendance to their patients by absence of competition, and by exempting them from *court* attendance (with its often exasperating delay and time-consuming by the dragging along of court proceedings) have proved practical and just. Prior to my own locating in this city I was a witness in every court (thrice each year) that convened in my town for a number of years. Many of the cases were frivolous damage-claims, without hope of remuneration for the witnesses whatever. And when, at length, I ascertained my professional exemption, I found solace by fortifying myself behind its provisions against the arbitrary demands of civil suits, which possessed neither interest nor profit for me in any event, but furnished great annoyance and tax upon time, income, and patience.

I find that a few attorneys "raise Cain" because I invariably insist upon my rights under this law, and point me to numerous doctors who attend readily on summons, most of them through ignorance of their exemption, others by reason of choice to air their attainments in public for the indirect advertising thereby secured. And I even find the legal brethren largely unaware themselves that physicians enjoy any exemptions in this State, except from jury duty and road-working, all of which are ours here.

Another comfort we (or at least I) reap from this statute is the opportunity for calm statement of facts in cases within our knowledge, generally at our own offices and convenience, writing the same leisurely ourselves in reply to written interrogatories. I am not, thus, subjected to annoying public cross-examination with a view of entangling me in my evidence through legal cunning, nor is the witness tortured by legal posing "for the galleries," before the jury, at his expense. It renders medical evidence dignified, and secures for it reasonable importance and respect before the court. It likewise relieves the too frequent appearance of a witness "rushing" forward—as grows common of late—to make a strong case for *his own patient* in these fashionable suits for personal damages, thus placing the profession in an attitude of fomenting and favoring the growing litigation along this line. Of course, this naturally breeds a leaning by doctors toward impulsively pressing or defending personal interests of others simply because of their patronage—in my own opinion a pernicious influence, because the doctor should only take interest in these matters through the plain equities of the various cases involved wherein he happens to (professionally) become a casual witness; and often his evidence must, if fair and unbiased, be diametrically antagonistic to the interests of his own patron. Such has at least been my own experience more than once; yet the simple fact that I had attended the plaintiff was taken as undoubted ground that my testimony would strengthen his case, even without so much as interrogating me in advance of filing the suit. Professional antagonisms and animosities spring from a like status.

When the witness calmly insists that he can *only* be used as a witness by deposition out of court, it shows on its face that *he is not inclined* to foment trivial damage-litigation, and whichever way his evidence goes, and when formally taken, it carries greater weight, and bears the appearance of unprejudiced testimony. And I find that the trouble it entails saves me from being utilized at all in trivial cases, or those greater ones in which my evidence is not of essential importance, the attorneys preferring to establish the facts sought by other witnesses, or even to forego such claims as my evidence might otherwise project into the case. Thus I am afforded freedom to a large degree from this tax on my time, and thereby enjoy enlarged opportunities for *personal* affairs as against arbitrary service hitherto at behest of irresponsible litigants often.

Of course, in criminal cases no exemption is allowed, nor ought to be, the doctor then standing to the case as an unprejudiced witness, just as I hold he should do in cases of every character—and largely conduced by our privilege here in civil actions, as already set forth, according to *my* idea of effects.

Very truly yours,

A PHYSICIAN OF TENNESSEE.

Kaposi and Neumann, after twenty-seven and thirty-two years of service respectively in the University of Vienna, have been made ordinary professors of dermatology.

NEWS ITEMS.

Report on the Mental Condition of Henry S. Cochran.—(A copy of the original as sent to the District Attorney.)

To ELLERY P. INGHAM, Esq.,
United States Attorney for Eastern District of Penna.

SIR: Agreeably to your request of September 30th last, the undersigned visited Henry S. Cochran in Moyamensing Prison, October 30th ultimo, and November 8th instant, between the hours of 11 A.M. and 12 M., for the purpose of making an examination into his mental condition, and now submit the following report:

The examination was conducted by propounding questions calculated to draw from the defendant a connected history of his life; of his business relations or occupations; of his domestic and social concerns. From the answers that might be elicited, we expected to form an opinion of the defendant's mental coherence; whether the answers were responsive; whether the memory was good or poor; whether the mental reflexes were active; also, whether he might exhibit any delusions, delusive ideas, or disorders of the senses, such as belong to, or are symptoms of, active insanity; or, that failure of the mental powers which sometimes is an accompaniment of the decay of old age.

On the occasion of both interviews we found the defendant willing to reply to questions freely, and did not hear or observe anything that led us to believe or suspect that he prevaricated or attempted to feign insanity.

We also made such physical examinations as possibly might have a bearing upon the question of insanity.

We found that answers to questions made by the defendant were responsive; without any exhibition of incoherence; his memory of events was reasonably exact and connected; his conversation was rational; and we could not infer from his life-history, as thus furnished, that at any time had there been any such departure from his normal or usual mental state as would lead to an opinion that an attack of insanity had occurred. Neither could we discover from our examination, the manner of the defendant, or his dress, the existence of any delusion, or hallucination of the senses.

The defendant stated he had been properly trained in his youth as to his moral duties and obligations; knew the difference between right and wrong; understood the nature of the charge against him, the reason of his present confinement, and that he was awaiting trial.

An examination of the eyes did not disclose any inequalities of the pupils. The pupils responded equally to the influence of light. The face was somewhat shrunken and the facial lines deep; the face had a pale hue; the tongue was pale and flabby, but both tongue and face were free from tremor. From the defendant's statement, and from the loose appearance of the clothing, assuming that it had at one time fitted him properly, there had been a marked loss of weight, amounting probably to fifty pounds. The pulse was normal in frequency, the artery at the wrist furnishing the sensation that characterizes the degeneration of arterial vessels in advanced life. The action of the heart was below the normal force of strength. No defect of the speech or articulation was observed.

An examination of the urine failed to disclose any marked abnormality; there was no appearance of albumin, sugar, or sediment, and the specific gravity was 1028.

The impression left on our minds, while not discovering evidences of organic disease, was that the general health was below the normal standard such as might appear at the age of the defendant, and might be induced partly by changed circumstances and environments.

As conclusions, we are of the opinion,

1. That the defendant, Henry S. Cochran, is not insane; and,

2. That he has a knowledge of right and wrong, of the nature of the charge against him, and the consequences of his acts.

Signed, JOHN B. CHAPIN, M.D.
JAS. HENDRIE LLOYD, M.D.

DATED PHILADELPHIA, PA., THE 14TH DAY OF NOVEMBER, 1893.

The Samuel D. Gross Prize.—The Quinquennial Prize of One Thousand Dollars under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1895.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut St., Philadelphia, before January 1, 1895.

Each essay must be distinguished by a motto, and accompanied by a sealed envelop bearing the same motto, and containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

To Succeed Charcot.—M. Brissaud has been delegated to take charge of the service of the late Professor Charcot at the Salpêtrière for a year, until a permanent successor has been appointed to the Chair of Diseases of the Nervous System. M. Potain has been appointed to fill the vacancy in the Medical Section of the Academy of Sciences.

A New Physiologic Institute at Moscow was recently opened. The building is said to have cost $60,000, and the furnishing $5000. The institute is said to be the best fitted of its kind in Europe.

The International Medical Congress, which was postponed from September 24th, on account of the prevalence of cholera in Italy, will be held at Rome from March 29 to April 5, 1894.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

BLOODLESS AMPUTATION AT THE HIP-JOINT.

A Report of Forty Cases by the Author's Method.[1]

BY JOHN A. WYETH, M.D.,

PROFESSOR OF SURGERY IN THE NEW YORK POLYCLINIC; ATTENDING SURGEON TO MT. SINAI HOSPITAL; CONSULTING SURGEON TO ST. ELIZABETH HOSPITAL, ETC.

As recently as 1881 Professor John Ashhurst, Jr., one of the highest authorities in modern surgery, wrote:[2] "The removal of the lower limb at the coxo-femoral articulation may be properly regarded as the gravest operation that the surgeon is ever called upon to perform, and it is only within a comparatively recent period that it has been accepted as a justifiable procedure."

This author further voices the accepted opinion of surgeons when he adds: "The most pressing risk in any operation at the hip-joint is that of hemorrhage."

Beginning with aortic compression by digital or mechanical means, as advised by Pancoast, Lister, Abernethy, and others, and later the intra-rectal lever of Davy for compressing the common iliac artery against the pelvis, the first really practical and valuable suggestion for controlling hemorrhage was the figure-of-eight elastic bandage of Jordan Lloyd,[3] which included the posterior aspect of the thigh in its grasp and then passed over the rim of the pelvis, making compression of the external iliac by means of a roller bandage placed beneath the elastic bandage and over this artery. This was in fact a figure-of-eight bandage around the thigh and abdomen.

So far back as 1865,[4] Dr. A. Hewson, an American surgeon, first employed acupressure in an amputation at the hip-joint. There was much loss of blood before the needles were placed and the patient died without reaction. In 1880 (July 28th) Trendelenburg, at the suggestion of Newman,[5] also employed acupressure as a means of controlling hemorrhage in hip-joint amputation:

"A steel needle 38 cm. long, 6 mm. broad, biconvex on cross section, and in the thickest portion or center 2 mm. thick, was inserted just below the anterior iliac spine and carried in the direction of the perineum, passing between the neck of the femur and the vessels, and emerging on the inner aspect of the thigh, near the perineo-femoral crease. A figure-of-eight ligature was then thrown over the ends of the needle and in front of the thigh, thus constricting the femoral artery and vein. The limb having previously been emptied of blood by the application of Esmarch's bandage as high as the middle of the thigh, a long knife was carried through the front of the thigh 2 cm. beyond the needle and parallel with it (Lisfranc), and a flap formed by cutting by transfixion. The vessels were then tied, the needle and figure-of-eight loop removed, and the head of the femur disarticulated. The needle was again introduced behind the bone, the figure-of-eight carried posteriorly, and the posterior flap then formed."

In 1886 (August 10th) Dr. Muscroft, of Cincinnati, employed a similar method:[1]

"A needle one-eighth of an inch wide, slightly bent at the point, about the thickness of a dime and four inches long, was introduced perpendicularly into the front of the thigh about an inch and a half below Poupart's ligament. The exact point of entrance was one-fourth of an inch internal to the combined sheaths of the vein, artery, and nerve. The point was pushed beyond the vessels, then turned outward until the needle had passed beyond them; the point was then pushed out through the integument. The needle was then behind the vessels and nerve. A piece of cord was passed under the heel and point of the needle, forming a figure-of-eight ligature."

Myles,[2] of England, advised a steel skewer to be passed through the thigh, the point entering an inch below Poupart's ligament, going external to the femoral artery and internal to the neck of the femur, emerging a little above the gluteal fold. An India-rubber cord in figure-of-eight fashion was then to be thrown over the ends of the skewer and the inner aspect of the thigh. The amputation was by lateral flaps.

In theory and practice any method of constriction that only controlled a part of the blood-supply at the hip, when, in the formation of flaps, the other portion was exposed to hemorrhage, must prove less satisfactory than one that permits the operation to be completed with absolute compression of every vessel passing the level of the coxo-femoral joint.

In 1888 I removed the outer half of the clavicle, the glenoid, acromion, and coracoid processes, and part of the body of the scapula, together with the upper extremity, of a patient suffering from a large sarcoma of the upper end of the humerus. Not wishing to perform a preliminary deligation of the

[1] Read at the meeting of the New York State Medical Association, October, 1893.

[2] International Encyclopedia of Surgery, vol. i, p. 669.

[3] Lancet, 1883, p. 897.

[4] American Journal of the Medical Sciences, vol. lii, p. 32.

[5] Archiv für klinische Chirurgie, 1881, B. xxvi, S. 861.

[1] Cincinnati Med. News, April, 1887.

[2] British Med. Journ., November 9, 1889.

subclavian in its third division, I transfixed with a stout mattress-needle the major pectoral muscle about three inches from the shoulder, and, at about the same distance from the joint on the *dorsum scapulæ*, I introduced a second needle in such a way that when I carried a strong rubber tube several times around the shoulder above these needles with strong traction, the compression was so great that hemorrhage was well-controlled during amputation. It occurred to me at the time that the same plan was equally feasible at the hip.

In 1890 I had the good fortune to apply the method successfully, and as, in the light of subsequent experience, I now believe, to establish an operation in which hemorrhage at the hip-joint is as safely and easily controlled as at the middle of the thigh. In 1890 I demonstrated the method at the meeting of the American Medical Association at Nashville, also at the International Congress at Berlin, and at Louisville before the Mississippi Valley Medical Association.

Under strict antisepsis the operative technique is as follows:

1. With the patient in the usual position for a hip-joint amputation, the limb should be emptied of blood either by elevation of the foot and lowering of the trunk, or by the Esmarch bandage applied from the toes to the trunk. Under certain conditions the bandage can be only partially or may be not at all applied. When a tumor exists or when septic infiltration is present, pressure should only be exercised not quite to the diseased portion for fear of driving septic matter into the vessels. After injuries attended with great destruction, crushing, or pulpification, of course the Esmarch bandage is not applicable, and one must trust to elevation to save as much blood as possible.

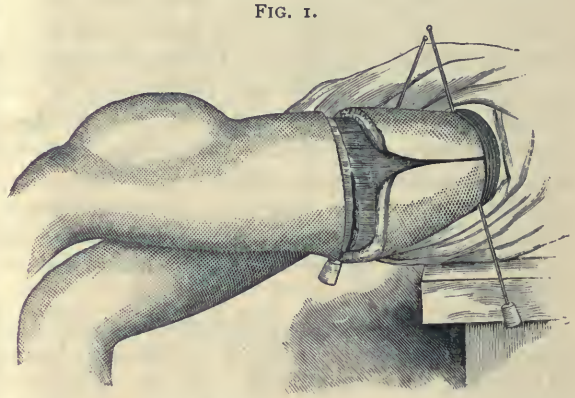
2. While the member is elevated or before the Esmarch bandage is removed, the *rubber-tubing* constriction is applied.

The object of this constriction—and it is the chief point in the method—is *the absolute occlusion of every vessel at the level of the hip-joint safely above the field of operation.*

To prevent any possibility of the tourniquet slipping I employ two large mattress-needles or skewers, about three-sixteenths of an inch in diameter and ten inches long, one of which is introduced one inch below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse superficially the muscles and fascia on the outer side of the hip, emerging on a level with and about three inches from the point of entrance.

The point of the second needle is made to enter one inch below the level of the crotch internally to the saphenous opening, and, passing squarely through the adductors, comes out an inch below the tuber ischii. The points are at once shielded by bits of cork to prevent injury to the hands of the operator. No vessels are endangered by these skewers. A piece of strong, white-rubber tube, half an inch in diameter and long enough when tightened in position to go five or six times around the thigh, is now wound very tightly around and above the fixation-needles and tied. If the Esmarch bandage has been employed, it is now removed. Dr. Lanphear succeeded in holding the constriction in place with only one (the outer) needle. Dr. Deaver was equally successful in holding the tubing well up by two strips of roller bandage, one before and one behind, held by an assistant, and thus dispensing

FIG. 1.



The needles and constrictor applied. Circular and longitudinal incisions for skin-flap.

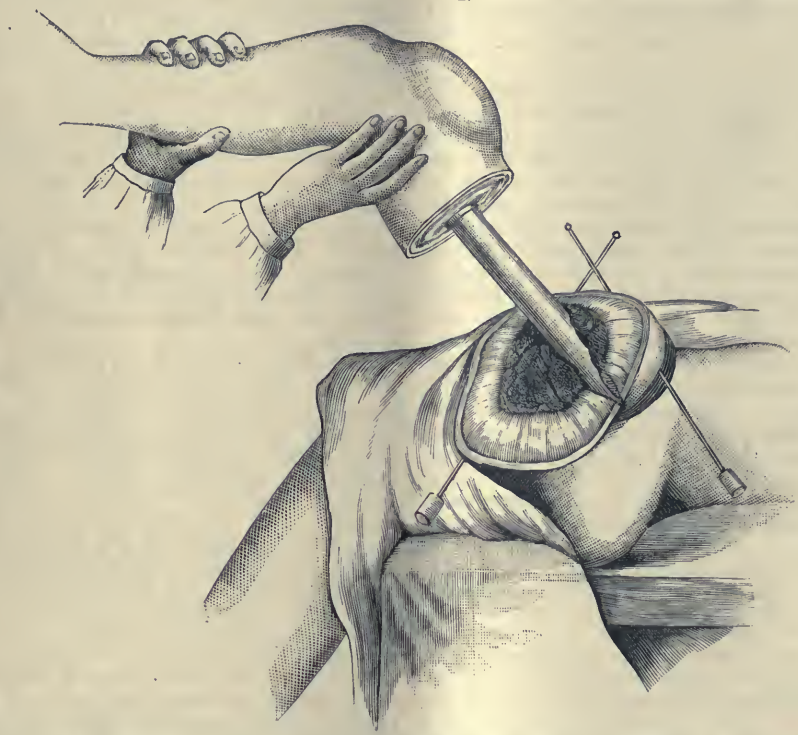
with the needles. Since the needles are, however, absolutely safe, easy to obtain and inexpensive (a piece of telegraph wire, even, will suffice), and entirely out of the way, I do not see any benefit to be derived from their disuse. On the contrary, I should be afraid to operate without them.

3. In the formation of flaps the surgeon must be guided by the condition of the parts within the field of operation. When permissible the following method seems ideal:[1] About six inches below the tourniquet a circular incision is made, and this is joined by a longitudinal incision commencing at the tourniquet and passing over the trochanter major. A cuff that

[1] At Bardstown, Kentucky, in August of 1806, Dr. Walter Brashear amputated at the hip in a negro lad, seventeen years old, on account of a severe fracture of the femur and laceration of the soft parts. A circular incision was made, the muscles divided well below the hip-joint, and the vessels secured as the operation progressed. Then a longitudinal incision along the outer side of the limb exposed the remainder of the bone, which, being freed from its muscular attachments, was disarticulated at the socket. (Prof. D. W. Yandell, in American Practitioner and News, 1890.) Dieffenbach's name has been prominently associated with this operation among surgeons, but Dieffenbach did not take his degree in medicine until 1822, sixteen years after the pioneer Kentuckian had performed his operation, the first hip-joint amputation performed in the United States.

includes the subcutaneous tissues down to the deep fascia is dissected off to near the level of the trochanter minor. At about the level of the trochanter minor the remaining soft parts, together with the vessels, are divided down to the bone by a circular cut, and, in order to facilitate the search for the vessels, the soft parts are rapidly removed from the femur for several inches below the line of the divided muscles. At this stage of the operation the larger vessels, *veins* as well as arteries, should be tied with good-sized catgut.[1] As suggested by Professor Murdoch, of Pittsburg, I now leave the entire extremity intact and use the full length of the limb as a lever in dislodging the head of the bone.

FIG. 2.



Cuff of skin and subcutaneous fat turned back, muscles divided at level of small trochanter, bone partly stripped, and large vessels exposed for deligation.

When the larger and easily-recognized vessels have been secured, the muscular attachments to the upper extremity of the bone are lifted off with scissors or knife, keeping along very close to the bone. Holding the soft parts away with retractors, the capsular ligament is exposed and divided in its circumference. Forcible elevation, abduction and adduction of the thigh permit the entrance of air into the socket, and, at the same time, rupture the ligamentum teres, and the disarticulation is thus easily and rapidly effected.

Properly conducted up to this point, not a drop of blood has escaped, except that which was in the limb below the constrictor when this was applied. If now the tourniquet be carefully and gradually loosened each bleeding-point may be determined and the forceps applied as required, until the tube is entirely removed.

Should any difficulty be encountered in the effort at enucleation (which is scarcely possible), the same precaution in securing all bleeding-points should be exercised in removing the tourniquet, and enucleation completed with the tourniquet out of the way.

4. There remains the closure of the wound, with the usual precaution of drainage. I prefer silkworm-gut for suture-material and one good-sized rubber drain from the acetabulum out at the most dependent part of the wound.

When by reason of the proximity of a neoplasm or the destruction of the parts by accident or disease, this ideal method is not practicable, any modification may be practised, preference being given to the incision that keeps furthest from the tumor or gives the healthiest flaps. When there is not sufficient material for perfect closure it is even safer to err on the side of an unclosed wound and trust to granulations or grafting for ultimate closing of the wound.

Before concluding the consideration of the tech-

[1] I employ catgut in all cases and have never had a secondary hemorrhage.

nique I wish to emphasize a point of great importance. When, by reason of severe hemorrhage before operation, or when from any pathologic anemia or condition of weakness, the operation should be rapidly completed and the small amount of blood that will necessarily be lost from capillary oozing should be saved, suturing of silkworm-gut should be rapidly introduced, the wound packed with hot sterilized plain gauze (not iodoform or bichlorid gauze), and the sutures temporarily tightened for snug compression of the wounded surfaces. This packing at once controls all oozing and can be removed, and in from twenty-four to forty-eight hours after reaction the sutures finally secured.

I have been able to obtain the histories of forty amputations at the hip by the foregoing method, of which the following brief histories are given:

CASE I.—By Dr. John A. Wyeth, of New York City, in 1890. Rev. J. H. S., thirty-nine years old. Twelve years previously he had noticed a small, hard tumor in the popliteal space. This gradually increased until the whole lower half of the femur was involved, forming a large osteo-sarcomatous tumor. On February 4, 1890, the first step was completed by amputation through the femur at the lower trochanter. The second step, February 20th, consisted of enucleation of the neck and head of the bone. Recovery was without interruption. (This is the first case on record.)

CASE II.—By Dr. John A. Wyeth, 1890. From J. G., a male, thirty-four years of age, a neuro-sarcoma of the internal popliteal nerve below the knee was removed by Dr. D. M. Stimson, on October 15, 1888. There was recurrence *in loco*, and amputation followed at the middle and lower third of the thigh by Dr. Wyeth in February, 1889. The growth again recurred in the stump in the winter of 1889–90, and in March, 1890, amputation was performed at the hip. Recovery was without interruption.

CASE III.—By Dr. John A. Wyeth, 1892. Miss J. B., seventeen years of age, had an osteo-sarcoma of the left femur at the knee. It was first noticed October, 1891. Amputation was on February 5, 1892, by Dr. Allen, of Cleveland, Ohio, at about the middle of the femur. The wound never healed, the growth recurring at once. On April 22, 1892, I disarticulated at the hip-joint. Recovery followed.

CASE IV.—By Dr. M. J. Ahearn, of Canada, 1892. The patient was a male, twenty-two years of age, with osteo-sarcoma of the femur. The man had acute nephritis, passing four and a half grams of albumin to every liter of urine. The operation was practically bloodless, and the patient recovered.—*L' Union Méd. de Montreal*, 1892.

CASE V.—By Dr. J. B. Murdoch, of Pittsburg, Pa., 1892. The patient was a male, seventeen years of age, with osteo-sarcoma of the thigh. Death from shock followed twenty-two hours after the operation, which was performed February 20, 1892.

CASE VI.—By Dr. W. W. Keen, of Philadelphia, 1892. The patient was a female, thirty years old, with an enormous osteo-sarcoma of the left femur extending from the knee to within ten inches of the hip. The first symptoms of the trouble dated back seventeen months. Operation was on January, 1892, the patient being five months pregnant. Recovery was uninterrupted.

CASE VII.—By Dr. Frank Hartley, of New York City, 1892. The patient was a female, twenty-six years old. On March 19th a tumor of the tibia, near the ankle-joint, was incised, and proved to be a giant-cell sarcoma. On March 25th amputation at the knee showed the femur to be involved. Amputation at the hip was performed May 14, 1892. There was no hemorrhage and no shock. Primary union followed, and the patient was discharged cured June 22, 1892.

CASE VIII.—By Dr. Charles McBurney, of New York City, 1890. A male, thirty-four years old, had sarcoma of the lower and middle thirds of the right femur, infiltrating the muscles. Amputation at the hip was performed May 3, 1890. The limb was elevated to empty it of blood, and Esmarch's bandage was not employed. "The hemorrhage was extremely light, and estimated as being perhaps an ounce of blood in all, and the operation in consequence was finished with great rapidity." Rapid and uninterrupted recovery followed.

CASE IX.—By Dr. J. McFadden Gaston, of Atlanta, Ga., November, 1890. A man, the age not given, had an enormous osteo-sarcoma of the left femur. The tumor weighed seventy-three pounds. The external iliac artery was also tied. There was profuse diarrhea twenty-four hours after the operation, and this continued for ten days. The man died on the twenty-sixth day after the operation from septicemia.

CASE X.—By Dr. A. J. McCosh, of New York City, 1892. The patient was a male, twenty-seven years of age, with an osteo-sarcoma of the femur involving the head, the neck, and the upper fourth of the shaft.

CASE XI.—By Mr. R. L. Swan, of Dublin, Ireland, 1892. A female, nineteen years of age, had had morbus coxarius from her fifth year. There was pathologic dislocation of the caput femoris. The thigh and leg were extensively infiltrated and burrowed by sinuses. There was extremely little shock, and a good recovery followed.

CASE XII.—By Dr. A. M. Phelps, of New York City, 1891. A male, fifty-five years old, had recurrent sarcoma of the middle third of the thigh, the clavicle having been removed two years previously for sarcoma. The operation was concluded in fourteen minutes. The patient was extremely anemic. Not more than one ounce of blood in all was lost. He recovered uninterruptedly. Operation performed at Charlottesville, Va.

CASE XIII.—By Dr. A. M. Phelps, December, 1891. A male, twenty-four years of age, had hip-joint disease of long standing. The operation was unattended with shock, rise of temperature, or bleeding, and the patient was up on crutches in two weeks.

CASE XIV.—By Dr. A. M. Phelps, 1892. A male, sixteen years old, had extensive osteitis of the whole lower extremity of two years' duration, and was almost moribund from septic absorption. Portions of the pelvic bones, which were involved, were also removed. No blood was lost. The patient died from exhaustion twelve hours after the operation. Dr. Phelps advised against operation in this case, and only did it at the urgent solicitation of the parents.

CASE XV.—By Dr. G. A. Baxter, of Chattanooga, Tenn., 1891. The patient was a negro lad, seventeen years of age, with compound comminuted fracture and pulpification of the right leg and foot, and of the left lower extremity as high as the middle of the thigh. He had been hauled in a wagon over a rough country road for two miles, and was found by Dr. Baxter in profound shock. So soon as reaction had set in, amputation of the right leg at the middle and of the left thigh at the hip-joint was performed. "Wyeth's technique was closely followed." There was no loss of blood, and disarticulation was easily effected. The patient rallied encouragingly, but four hours after the operation, contrary to the directions of the doctor, he raised himself to the sitting posture and instantly expired. Heart-failure was evidently induced by loss of blood prior to the operation, and by profound shock following the injury, to which was added

the shock of operation. "The control of hemorrhage by the method employed was perfect."

CASE XVI.—By Dr. W. B. Johnston, of Ellicottville, N. Y., 1892. The patient was a male, thirty-nine years old, who had sustained a railway injury in which the foot, the leg and thigh, to a point above the middle third, were "pulped," and the femur divided near the trochanter minor. "There was no arterial bleeding whatever, and only slight oozing from the muscles." The man died from shock and exhaustion ninety hours after.

CASE XVII.—By Dr. J. D. Thomas, of Pittsburg, Pa., 1891. The patient was eighteen years of age. On July 31st, while attempting to grasp with tongs a red-hot bar of iron passing through the rollers, he was struck by the rod in the left thigh. The bar penetrated the tissues and seared through the saphenous and femoral veins and the femoral artery. The loss of blood was at once almost fatally profuse. Dr. J. M. Duff, who first saw the man, placed a compress and bandage over the wound. As the patient rallied slightly, bleeding occurred chiefly from the proximal end of the divided femoral vein. The wound was packed by Dr. Thomas with iodoform-gauze, and over all was placed a cotton bandage. Heat was applied locally and stimulants administered hypodermatically. On the third day amputation at the hip was proposed on account of threatened gangrene, but was not permitted. Ligatures were applied to the large vessels. On the seventh day amputation was performed. The man rallied well for thirty-six hours, then failed rapidly, dying eight and one-half days after the injury.

CASE XVIII.—By Dr. W. F. Fluhrer, of New York City, 1890. A female, eighteen years of age, had osteo-sarcoma of the left thigh of six months' history. There had been spontaneous fracture of the thigh at the middle, on April 26, 1890. Amputation at the hip was performed on May 2d, and on July 1st the patient was up and out on crutches.

CASE XIX.—By Dr. Merrill Ricketts, of Cincinnati, O., 1893. A female, twenty-three years of age, had osteo-sarcoma of the right thigh, and was operated upon on February 2, 1893. "Operation bloodless." She recovered promptly.

CASE XX.—By Dr. C. A. White, of Atlanta, Ga., 1891. A male, twenty-three years, had osteo-sarcoma of the left femur, involving the whole length of the shaft. The tumor was four times the size of the thigh. Operation was performed on May 26, 1891. The patient recovered rapidly, gained twenty pounds in weight, and by June 22d was up on crutches. He was seized with acute pneumonia on the 27th day and died five days later. The pneumonia was independent of the operation, as the wound was entirely healed a week before the onset of the malady that carried him off.

CASE XXI.—By Dr. John B. Deaver, of Philadelphia, October, 1890. A female, twenty years of age, had extensive osteo-arthritis of the upper end of the femur and acetabulum. Excision of the head of the femur had been performed in 1889 by Dr. J. Ewing Mears. Numerous sinuses and extensive infiltration of soft parts were found. On November 30th the patient was "entirely well."

CASE XXII.—By Dr. John B. Deaver, 1893. A male had osteo-myelitis of the femur. He was greatly emaciated and depressed from long septic absorption. The amount of blood lost did not exceed two ounces. The fixation-pins were discarded and the circular constriction at the hip was held up by an assistant with strips of bandage. There was a good recovery.

CASE XXIII.—By Dr. J. Ewing Mears, of Philadelphia, 1892. The patient was a boy, ten years of age, with chronic osteo-arthritis of the hip and femur. Recovery.

CASE XXIV.—By Dr. Archibald E. Mallock, of Hamilton, Ontario, Can., 1892. The patient was a man, thirty years of age, with chronic osteo-arthritis of the hip, for which excision of the head of the femur had been performed December 16, 1891. Amputation was performed on March 12, 1892. It lasted thirty-five minutes, and several deep sinuses were exsected. Recovery followed.

CASE XXV.—By Dr. Charles B. Nancrede, of Ann Arbor, Mich., 1893. This was a case of tuberculous osteitis in a man thirty-one years of age. The femur was implicated as high as the trochanter and there was general infiltration of the soft parts. Operation was performed on May 1, 1893, and was followed by an uninterrupted recovery.

CASE XXVI.—By Dr. Charles B. Nancrede, 1892. The patient was a man, thirty-two years of age, with a history of injury to the left thigh several years before the operation. An osteo-sarcoma developed for ten months. The operation was performed in November, 1892. The disease involved the soft structures close to the joint-level. Hemorrhage was quite free after the tube was removed. Recovery followed.

CASE XXVII.—By Dr. Emory Lanphear, of Kansas City, Mo., 1890. The patient was a colored boy, nine years old, with osteo-myelitis of the shaft of the femur. Excision of the knee had been performed October 21, 1890. On October 24th the condition of the patient was so desperate that longer delay meant death, and amputation at the hip was performed. Scarcely an ounce of blood was lost. There was uninterrupted recovery.

CASE XXVIII.—By Dr. Emory Lanphear, 1892. A male, fifteen years old, had "osteo-myelitis of the entire shaft of the femur, with profound septicemia." The operation was completed in twenty-nine minutes. "Not more than two ounces of blood could have been lost, and this was from parenchymatous oozing." The patient died from septicemia.

CASE XXIX.—By Dr. Emory Lanphear, 1892. The patient was a woman, twenty-eight years old, with a history of severe neuralgic pain in the great toe, for which, in 1888, her physician had amputated this member. No relief followed, and Chopart's amputation was performed by another operator. Subsequently amputation was performed just above the ankle; again just below the knee; once more through the condyles of the femur; and still again at the middle of the thigh; finally, on August 28, 1892, Dr. Lanphear amputated at the hip. A sharp process of bone was found developed from the femur near the trochanter. This had penetrated the sciatic nerve and caused the severe pains. The patient recovered and was relieved.

CASE XXX.—By Dr. Emory Lanphear, 1893. A man, twenty-eight years of age, had osteo-myelitis of the shaft of the femur occurring after amputation at the junction of the lower and middle thirds. The operation was performed on February 24, 1893, and was followed by recovery without interruption.

CASE XXXI.—By Dr. Samuel H. Pinkerton, of Salt Lake City, Utah Ty., 1892. A boy, six years old, sustained a compound comminuted gunshot fracture of the femur. He died two hours after operation, from shock.

CASE XXXII.—By Dr. Samuel H. Pinkerton, 1892. A male, seventeen years old, had extensive tuberculous osteitis of the femur. The disease had been in progress many years. Recovery was slow, and was succeeded by subsequent curetting of the acetabulum.

CASE XXXIII.—By Dr. Samuel H. Pinkerton, 1892. A male, seventeen years of age, had tuberculous osteitis of the upper end of the femur, and acetabulum. There was recovery, the wound healing by granulation.

CASE XXXIV.—By Dr. Samuel H. Pinkerton, 1892. A boy, ten years old, had tuberculous osteitis of the femur. The operation was followed by recovery.

CASE XXXV.—By Dr. Samuel H. Pinkerton, 1892. A man, forty-three years old, had necrosis of the femur, and there had been spontaneous fracture. The patient died ten hours after the operation, from shock.

TABLE.

No.	Operator.	Date.	Age.	Sex.	Diagnosis.	Result.	Remarks.
1	John A. Wyeth,	Feb., 1890	39	Male	Osteo-sarcoma.	Recovered	At first operation femur was divided at level of lesser trochanter; sixteen days later head of the bone was enucleated.
2	John A. Wyeth,	Feb., 1890	34	Male	Neuro-sarcoma of internal popliteal nerve.	Recovered	The tumor of the nerve was extirpated Feb., 1888; recurred, and limb was amputated at lower third of thigh Oct. 1888; recurred again, and amputation at hip-joint was performed.
3	John A. Wyeth,	1892	17	Female	Osteo-sarcoma of lower end of femur; amputation and recurrence in stump.	Recovered	Amputation through lower third of femur was performed by Dr. Allen, of Cleveland, Feb. 5, 1892.
4	Wm. F. Fluhrer,	May, 1890	18	Female	Osteo-sarcoma of femur.	Recovered	Spontaneous fracture at middle of thigh April 26, 1890.
5	Charles McBurney,	May, 1890	34	Male	Osteo-sarcoma.	Recovered	
6	Frank Hartley,	March, 1892	26	Female	Osteo-sarcoma.	Recovered	
7	Merrill Ricketts,	Feb. 2, 1893	23	Female	Osteo-sarcoma.	Recovered	
8	C. A. White,	May 26, 1891	23	Male	Osteo-sarcoma.	Recovered	Patient was up and about after operation, but on twenty-seventh day was seized with pneumonia and died five days later.
9	A. M. Phelps,	1891	55	Male	Osteo-sarcoma.	Recovered	
10	W. W. Keen,	Jan., 1892	30	Female	Osteo-sarcoma.	Recovered	Patient was five months pregnant at date of operation.
11	M. J. Ahern,	1892	22	Male	Osteo-sarcoma.	Recovered	
12	J. B. Murdoch,	Feb., 1892	17	Male	Osteo-sarcoma.	Died	Death from shock twenty-two hours after operation.
13	Chas. B. Nancrede,	Nov., 1892	32	Male	Osteo-sarcoma.	Recovered	
14	J. McFadden Gaston,	Nov, 1890	?	Male	Osteo-sarcoma.	Died	Death on twenty-sixth day, from septicemia.
15	A. J. McCosh,	1892	27	Male	Osteo-sarcoma.	Recovered	
16	A. M. Phelps,	Dec., 1891	24	Male	Long-standing destructive osteo-arthritis.	Recovered	
17	A. M. Phelps,	1892	16	Male	Osteo-myelitis of entire femur.	Died	Death from exhaustion twelve hours after operation. Condition of this patient was so bad that operation was contra-advised, but was performed at urgent request of parents.
18	Emory Lanphear,	1890	9	Male	Osteo-myelitis of femur	Recovered	
19	Emory Lanphear,	1892	15	Male	Osteo-myelitis of femur	Recovered	
20	Emory Lanphear,	1893	28	Male	Osteo-myelitis of femur	Recovered	
21	Chas. B. Nancrede,	1893	31	Male	Osteo-myelitis of femur	Recovered	
22	Samuel H. Pinkerton	1892	17	Male	Tuberculous osteitis of femur	Recovered	
23	Samuel H. Pinkerton,	1892	10	Male	Tuberculous osteitis of femur	Recovered	
24	Samuel H. Pinkerton,	1892	42	Male	Extensive necrosis of femur	Recovered	
25	Samuel H. Pinkerton,	1892	43	Male	Extensive necrosis of femur	Died	Death twelve hours after operation, from shock.
26	Samuel H. Pinkerton,	1892	17	Male	Osteitis of femur.	Recovered	
27	J. Ewing Mears,	1892	10	Male	Chronic osteo-arthritis of hip.	Recovered	
28	Archibald E. Mallock,	1892	30	Male	Chronic osteo-arthritis of hip.	Recovered	Operation lasted thirty-five minutes.
29	John B. Deaver,	1890	20	Female	Chronic osteo-arthritis.	Recovered	
30	John B. Deaver,	1893	20	Male	Osteo-myelitis of femur.	Recovered	
31	R. L. Swan,	1892	19	Female	Chronic osteo-arthritis of hip.	Recovered	
32	G. A. Baxter,	1891	17	Male	Railroad pulpification of right foot, leg, and left lower extremity as high as middle of thigh.	Died	Patient rallied well; four hours later raised himself in bed to reach a glass of water and instantly expired.
33	W. B. Johnston,	1892	39	Male	Railroad pulpification of lower extremity, as high as middle of thigh.	Died	Death ninety hours after operation, from shock and exhaustion.
34	J. D. Thomas,	1891	18	Male	Femoral vessels divided in Scarpa's triangle by red-hot bar of iron; impending gangrene.	Died	Great hemorrhage from the accident. On seventh day after injury, amputation; death thirty-six hours later.
35	Samuel H. Pinkerton,	1892	6	Male	Compound, comminuted gunshot fracture of femur.	Died	Two hours after operation death from shock.
36	Emory Lanphear,	1892	28	Female	Osteoma of femur penetrating sciatic nerve.	Recovered	
37	H. O. Walker,	1892	14	Male	Osteo-sarcoma.	Recovered	
38	H. O. Walker,	1893	21	Male	Chronic hip-joint disease.	Recovered	
39	H. O. Walker,	1893	Young	man	Chronic hip-joint disease.	Died	Exhaustion in four hours.
40	F. W. Parham,	Oct. 5, 1893	3	Male	Osteo-sarcoma.	Recovered	

CASE XXXVI.—By Dr. Samuel H. Pinkerton, 1892. A man, forty-two years of age, had extensive necrosis of the femur. Recovery followed the operation. Healing took place by granulation.

CASE XXXVII.—By Dr. H. O. Walker, of Detroit, Mich., 1892. A boy, fourteen years old, had seven months previously been kicked by a horse. Osteo-sarcoma developed in the middle of the femur. Amputation performed on September 27, 1892, followed by recovery.

CASE XXXVIII.—By Dr. H. O. Walker, 1893. A man, twenty-one years of age, in whom six years previously hip-joint disease had developed. There had been exsection of the head of the femur on August 11, 1891. Amputation was performed in August, 1893. Recovery followed.

CASE XXXIX.—By Dr. H. O. Walker, March, 1893. The patient was a young man with chronic tuberculous osteo-arthritis of the hip. Operation was undertaken with but little hope of success as he was in a very low condition, the temperature ranging from 102° to 105° F. He died four days after operation.

CASE XL.—By Dr. F. W. Parham, of New Orleans. A boy, three years old, with osteo-sarcoma of the femur. The operation was performed on October 5, 1893. Recovery followed. "The method gave thorough satisfaction. Not over two ounces of blood were lost.

This limited number of cases—40 in all—gives a death-rate of 22.5 per cent. (Five were re-amputations.)

	Cases.	Deaths.	Per cent.
Sarcoma	17	2	11.76
Inflammatory bone-disease	18	3	16.6
Violence	4	4	100.0
Nerve-injury	1	0	——
For disease	36	5	13.88
For injury	4	4	100.0

Ashhurst's table of 633 cases gives a total mortality of 64.1 per cent.

	Cases.	Death-rate per cent.
For disease	276	40.2
For injury	309	82.4

Luning gives:

	Cases.	Death-rate per cent.
Gunshot wounds	239	98.0
Disease	153	42.0

Without discussing statistics, I claim it safe to conclude that by the method given bleeding after hip-joint amputation is as safely and as securely controlled as for an amputation of the thigh lower down. In no single case has it failed, and it has been employed now by operators of all grades of experience.

Prof. W. W. Keen, who employed this operation successfully at the Jefferson Hospital, Philadelphia, in January, 1892, for an enormous sarcoma of the thigh (the patient being five months pregnant at the time), in reviewing all the methods of controlling hemorrhage, said:[1] "It was reserved for an American surgeon to devise what is undoubtedly the best method and, in fact, what I think we can call now the only method of hemostasis in amputation at the hip-joint."

[1] THE MEDICAL NEWS, March 26, 1892.

Prof. J. B. Murdoch, of Pittsburg, who has four times performed hip-joint amputation, and once by my method, says:[1] "I believe this method to be the best and the one destined to supersede all other methods for the temporary arrest of hemorrhage."

Prof. W. F. Fluhrer[2] emphasized "that as little blood had been lost as in an ordinary amputation at the middle of the thigh."

Prof. McBurney[3] expressed the opinion that "no other appliance that had been suggested for the purpose could in any way compare in utility with that of Dr. Wyeth."

Prof. Emory Lanphear, of Kansas City, who has four times amputated at the hip by this method, says:[4] "This operation (Senn's)[5] is certainly better than any other yet devised save that which is known as the 'Wyeth bloodless method,' by which method failure to control hemorrhage seems to me to be impossible."

Prof. McFadden Gaston, of Atlanta, says:[6] "There was absolutely no trouble from hemorrhage . . . . and I feel satisfied that with this process all bleeding may be prevented in amputation at the hip-joint."

Dr. B. Merrill Ricketts, of Cincinnati, writes me that "the operation was entirely bloodless."

Dr. W. B. Johnston, of Ellicottville, New York, writes: "There was not one drop of arterial blood and only a slight venous oozing from the muscular tissue."

Prof. H. O. Walker: "We have in this a safe and reliable method for controlling hemorrhage which, in my judgment, is superior to any yet offered."

By personal communication Professors McCosh, Baxter, A. M. Phelps, Hartley, and Parham have expressed themselves that the method met every requirement in the prevention of loss of blood.

The question of *shock* is very important in this major operation. It is strongly brought out by Prof. Murdoch, who insists that "the greatest care must be exercised to maintain the vital forces by the moderate use of stimulants before the operation and the protection of the surface of the body from cold and exposure during its performance." To this

[1] Annals of Surgery, January, 1893.

[2] International Journal of Surgery, 1890.

[3] Ibid. [4] Kansas City Med. Journ., May, 1893.

[5] This method, devised by Prof. N. Senn, requires an incision eight inches in length, commencing three inches above the trochanter: the capsule, trochanter, and upper portion of shaft are exposed, the trochanteric muscular attachments severed, the digital fossa emptied, the capsule divided, and the head of the femur dislocated before any constriction for the control of hemorrhage is attempted. I do not think that this method will be received with favor by surgeons. The only instance in which it has been applied, to my knowledge, was by Dr. W. D. Foster, of Kansas City. "The patient was the subject of chronic coxitis, was much emaciated, and very weak. The operation was tedious, protracted, and bloody, and the patient survived between three and four hours." (Private communication.)

[6] Transactions Alabama State Medical Association, 1892.

should be added the minimum of anesthetic and the maximum of rapidity in technique consistent with thoroughness and the prevention of bleeding.

When ether is employed the Ormsby inhaler secures the safest narcosis with the smallest amount of ether.

NOTE.—Since the paper was read I have done a fourth amputation for tuberculous osteo-arthritis at the hip, without loss of blood and with recovery. The patient was a male, twenty-seven years old, and the disease had existed from childhood.

THE EFFECT OF CASTRATION ON WOMAN, AND OTHER PROBLEMS IN GYNECOLOGY.

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THERE are problems in gynecology not yet fully solved, on which I purpose in this paper to give my own individual opinion—an opinion that I do not claim to be infallible, but which is based upon a large experience.

One question not yet satisfactorily answered is this: What effect upon a woman has the removal of her ovaries? Unquestionably there usually follow the annoyances of the change of life. These, in my experience, are long spun out, because, when menstruation has been abruptly and artificially stopped, the change of life, especially in young women, takes more time to become fully established than when the menopause has been naturally induced. Consequently, years may elapse before the victim of the operation escapes from the perspirations, the flashes of heat, the skin-tinglings, the numbness of the extremities, the nerve-storms, and all other vaso-motor disturbances, the name of which is legion. My experience, therefore, coincides with that of Hegar, who says that "the artificial menopause induced by the operation is often attended with more serious complications than those which are not rarely observed in the natural change of life."[1]

Then again the unwelcome fact cannot be shirked that mental disturbances may be traced directly to the removal of the ovaries as a cause. These are manifested by brooding, by low spirits, by melancholy and even by insanity. Every ovariotomist has met with such painful episodes in his practice. Glavaecke, who has made a study of this subject, goes so far as to declare that "in almost all cases the mind becomes more or less affected, and not infrequently melancholia results."[2] Keith has stated that ten per cent. of his patients who recover from hysterectomy subsequently suffer from melancholia or from other forms of mental disease.[3] Yet this result must come, not so much from the extirpation of the womb, which is merely a muscular bag, as from the associated ablation of the ovaries, of which the womb, physiologically, is only the appendage.

Whether this deplorable event is due directly to the nerve-shock of the operation itself, together with its emotional environment; whether to the abrupt arrest of an habitual flow; or whether to the absolute need of the ovaries for mental equilibration—is yet an open question. We know, however, that sexuality is a potent factor in woman as well as in man, and that even certain sexual functions—such as coition, menstruation, gestation, parturition, and lactation—of themselves tend not infrequently to disturb the mental poise. I am disposed, however, in a measure to attribute the attacks of insanity in those women who have lost their ovaries to their brooding over the thought that they are unsexed; and if brooding may be deemed in itself a mental aberration, Glavaecke's sweeping statement is not an extravagant one.

But, after all, the burning question is: Does the removal of the uterine appendages affect the sexual sense of the woman, or in any way unsex her? Here we have an embarassing diversity of opinion. Some operators contend that in these respects castration does not affect her at all; others that it does so, and often very decidedly. The truth in such cases usually lies in the mean, as I shall try to show.

In my *Lessons in Gynecology* and in my early teachings I maintained that the removal after puberty of the ovaries and the tubes does not unsex the woman—at least not to a greater extent than castration after puberty unsexes the man. In the one the ability to inseminate is lost; in the other the capability of being inseminated; but in both the sexual feelings remain pretty much the same. Males who have lost their testes after the age of puberty are said to retain the power of erection, and even of ejaculation, the fluid being of course merely a lubricating one. The amorous proclivities of the ox or of the steer are the scandal of our highways. Alive to these facts, Oriental jealousy demands in a eunuch the complete ablation of the genital organs. Not only are the testes, therefore, removed, but also the scrotum and the penis flush with the pubes. Hence, to avoid the soiling of his clothes, every eunuch carries in his pocket a short silver tube, which he inserts merely in the pubic meatus whenever he passes his water. I contended, further, that, apart from cessation of menstruation and from inevitable sterility, the woman after castration remains unchanged, having the same natural instincts and affections; that the sexual organs continue excitable, and that she is just as womanly and as womanish as ever. I held that the seat of sexuality in woman had long been sought for, but

[1] British Medical Journal, December, 1886, p. 1280.
[2] N. Y. Medical Journal, July 20, p. 73. [3] Ibid., p. 73.

in vain. The clitoris had been amputated, the nymphæ had been excised, and the ovaries and tubes extirpated; yet the sexual desire had survived these mutilations. The seat had not been found, because sexuality is not a member or an organ, but a sense—a sense dependent on the sexual apparatus, not for its being, but merely for its fruition. My inference was that the physical and psychic influence of the ovaries upon woman had been greatly overrated. In the popular mind a woman without ovaries is not a woman. Even Virchow contends that "on these two organs (the ovaries) depend all the specific properties of her body and her mind, all her nutrition and her nervous sensibility, the delicacy and roundness of her figure, and, in fact, all other womanly characteristics." This statement I held to be true only in so far as the ovaries are needful for the primary or rudimental development of woman, but not true when once she is developed; for then they are not essential to her perpetuation as woman.

In time, however, I slowly found out that the removal of the ovaries does blunt and often does extinguish ultimately the sexual feeling in woman; although the removal of the testes after puberty is said not to impair the virile sense of the male. This random opinion, however, I very much doubt, despite the maudlin sentiment expressed even about eunuchs by De Amicis and by other travellers in the Orient. For the secretion of the seminal fluid is in itself the great aphrodisiac, and how otherwise can we explain the changed behavior of Abelard toward Heloïse after his forcible castration? Giving up this analogy, therefore, in my more recent teachings I adopted that of the menopause as suggested by Kœberlé. I accepted his analogy, although I could not wholly accept his inference that woman is not affected sexually by the natural cessation of her menses. Kœberlé sums up his opinion in the following words: "In my own experience the extirpation of both ovaries causes no marked change in the general condition of those who have been operated on. They are women who may be considered as having abruptly reached the climacteric. Their instincts and affections remain the same, their sexual organs continue excitable, and their breasts do not wither up." [1]

A riper experience, of which time was the main element, has led me still further to modify my views on this subject. Unquestionably the natural change of life when fully established, but not until it is fully established, does very sensibly dull and deaden the sexual sense of woman, which ultimately disappears in her long before virility is effaced in man. Nor is the survival of this sense after the menopause so essential to woman, because after the cessation of menstruation she loses the power of procreation, which is retained to an advanced age by man. This is a wise provision of Nature, for, did the sexual sense of the wife outlast that of the husband it could not be gratified. Sensible of these changes, a gifted French authoress makes one of her heroines say, with italicized emphasis: "*Men* may forget the course of years; they may love and become parents at a more advanced period than we can, for Nature prescribes a term after which there seems to be something monstrous and impious in the idea of (our) seeking to awaken love. . . . . Yes; age closes our mission *as women* and deprives us of our sex." Now what happens in the natural menopause holds good in that artificially and abruptly produced, with this important difference, that in the latter the sexual feeling is sooner lost. I am willing to concede that in some women, by no means in all, whose health had been so crippled by diseased appendages as to extinguish all sexual feelings, there is, after castration, a partial recovery of the lost sense whenever health has been regained. Yet even in these cases, as far as I can ascertain—for women are loath to talk about these matters—the flame merely flares up, flickers, and soon goes out.

My own experience would lead me to the conclusion that in the majority of women who have been castrated the sexual impulse soon abates in intensity, much sooner than after a natural menopause, and that in many cases it wholly disappears. This tallies with Glavaecke's conclusion that "in most of the cases the sexual desire is notably diminished and in many cases is extinguished." In corroboration of this statement let me cite, out of my many cases in point, a few of the more salient ones. The wife, aged thirty-four, of a farmer, so exhausted him by her sexual exactions that his health suffered very seriously. The appendages were diseased and fixed by adhesions. After their removal menstruation and the sexual impulse continued unabated for a little over a year, when the former wholly ceased, and the latter not long after disappeared. Another case was the very ardent wife, aged thirty, of a man who was not so well-mated to her. She was sterile and had excessive menorrhagia from a uterine fibroid, for which her ovaries were removed. Menstruation did not reappear, and in less than two years all sexual feeling was lost. In a third case, a young lady of high intelligence was reduced to a pitiable condition of ill-health by menorrhagia and by frequent acts of self-abuse. She was not insane, yet, incredible as it may seem, she sometimes masturbated no fewer than eight times in the four and twenty hours. For several months after the removal of the ovaries, which were apparently healthy in every respect, she kept up her bad habits, although

[1] Nouveau Dictionnaire de Médecine et de Chirurgie, tome xxv, p. 487.

the monthly flow never returned. Then the sexual feeling gradually vanished, and she gave up her solitary vice. In a fourth case I removed the healthy ovaries of an unmarried lady of middle age who was queer, but not insane enough to be confined. Toward her monthly periods she was goaded by so irresistible a desire for sexual intercourse that she herself feared her going astray. Not long after her castration, which was done more to save her from reproach than to cure her insanity, she lost the desire wholly and absolutely. She did not, however, regain her reason, and ultimately had to be placed in an insane asylum.

Imlach's case is a celebrated one in medico-legal jurisprudence. This skilful surgeon, after removing the appendages of a woman, was prosecuted by her for unsexing her, and by her husband for spoiling thereby his marital pleasures. The special committee appointed to investigate Imlach's numerous cases of castration at the Woman's Hospital, in Liverpool, reported that they found "a distinct loss of sexual feeling to such an extent as to cause serious domestic unhappiness in not a few instances." The correctness of this report is corroborated from cases in my own practice, of engagements broken off, of conjugal estrangements, and of marital infidelity.

Let me here remark that I was once consulted by the late Dr. Kerlin about the propriety of removing the ovaries from a feeble-minded inmate of his institution, whose shameless intercourse with the other sex was the only bar to her being at large. Being very sanguine that the operation would succeed in its object I urged its performance. He, however, could not get the official sanction which we both wished for our own legal protection, and nothing further was done than to keep the girl under lock and key.

In other sexual characteristics I have not found in these women any marked changes, either physical or psychic. Their affections seem to remain the same; their breasts do not flatten or wither up; they do not become obese; abnormal growths of hair do not appear on the face or on the body, and the tone of their voice and its quality are not changed. In one word, there has not been in a single one of my cases a tendency toward any characteristic of the male type. If any change has taken place, it has been in the direction of old-maidhood.

In close relation with this subject four questions come to the fore, and grave ones they are:

a. Do chronic diseases of the appendages often lead to a fatal issue?

b. To restore health to the woman suffering from such diseases of the appendages, is it needful invariably to invoke the aid of surgery?

c. After an abdominal section has been made, and after adhesions have been broken, must the now free appendages always be removed?

d. Is castration of the female a warrantable operation for the cure of insanity or of epilepsy?

To the first question I answer that the death-rate from chronic diseases of the appendages is greatly overrated, so much so that, in my opinion, more deaths result from the operation of removing the tubes and ovaries, in the hands of even the most successful gynecologist, than from the disease itself. Knowsley Thornton states that "in his own experience pyosalpinx is not necessarily a fatal disease." In my experience, after the patient has safely passed through the acute stage of the inflammatory attack, her life is in very little danger. Chronic diseases of the appendages usually affect the well-being of the woman, but they ordinarily do not threaten her life in any other way than by the wear and tear of prolonged discomfort. This may shorten her days, but fatal attacks of peritonitis, even in so-called leaky pus tubes—if such ever exist—are the exception. Paradoxic as it may seem, the life of a woman with but one ailing appendage is in greater danger than the life of a woman with both of her appendages diseased. The explanation is a simple one: Parturition very generally relights a chronic inflammation of the pelvic organs, but when both appendages are diseased pregnancy rarely takes place.

To cure the ill-health of a woman whose appendages are diseased, or to relieve her from her sufferings, a surgical operation is by no means always necessary. Many women with adherent tubes and ovaries, and, for the matter of that, some even with pus in these organs, suffer either no inconvenience whatever, or very little indeed from that condition *per se*. There are, again, others who have pains or aches only at their monthly periods. But let their health break down, say from influenza, from malaria, from overwork, or from nerve-strain, then symptoms may arise from hitherto latent pelvic lesions. Yet, in most of these cases, if the woman can be restored to her former condition of health—that is to say, to that which she enjoyed just before the final breakdown—she will lose her local symptoms and become symptomatically well. On this matter I can speak positively, for many a patient has been sent to my private hospital in order to have her distinctly diseased tubes and ovaries removed, who has been restored to health without the use of the knife. Now, by the term "*restored to health*," I do not mean that the treatment has released the adherent appendages, but that it has freed the woman from every pain and restored her fully to all her social and domestic duties and pleasures. She has been cured so well as to be able to row, to swim, to dance, to take long walks, to ride on horseback

and to exercise in the gymnasium—and what better vouchers of good health than these can be given?

I will go yet further and assert that even cases with all the subjective and all the objective symptoms of ovarian or of tubal abscess have been cured by me without any operation whatever—the pus having disappeared either through absorption or through inspissation. What is still more strange, in a few cases of abscess of each uterine appendage—very few, I will acknowledge—the treatment by massage, electricity, local applications, and by a general building up of the system was followed by conception, pregnancy, and parturition. These were cases in which I did not advocate castration until other means had been tried first, but all had been sent to me by their physicians for the purpose of having their ovaries removed.

I come now to two cases on which I urged castration. Perhaps I have had more, but I cannot recall them. Each one had the fixed, sausage-like, tubal tumor on either side. Yet each patient, to my very great surprise, conceived and bore children. The one, a patient of my friend Dr. D. Murray Cheston, first consulted me and afterward a gynecologist of world-wide renown, who corroborated my diagnosis of double pus-tubes, and doomed her, as I had, to hopeless sterility. The puerperal convalescence was stormy and at one time threatening; but she ultimately got well. The other case is a standing joke of my friend Professor Parvin, who knew the circumstances. The woman presented similar characteristics to those of the preceding case, and I urged an operation. This she luckily refused to undergo, and a year or more afterward gave birth to twins. Of course, the rejoinder will be made, that my diagnosis, although shared by other specialists besides myself, was a faulty one. But I can as unhesitatingly reply that had the objector made the examination he inevitably would have followed it by an abdominal section, and as inevitably would have removed both appendages, as I certainly should have done had I opened the abdomen.

Now, in these cases, the pus was either confined to the ovaries, or, as I supposed from the sausage-like form of the tumors, it lay sealed up in the tubes, and the closed-up lumen of one of them was, by returning health, restored to full patency. The possibility of a closed-up tube regaining its bore is I know strongly disputed, even ridiculed, and *a priori* reasoning would certainly justify the doubt. If, however, solid uterine fibroids of stony hardness and of several pounds weight will through absorption wholly disappear, as every gynecologist has seen them disappear, why may not the tubal barriers and septa also break down and become absorbed. I have read somewhere, but the reference I cannot now find, that, in order to prevent conception in a case of narrow pelvis, both tubes were ligated, without establishing sterility. On the other hand, great disorganization of the ovaries is not incompatible with pregnancy, for it appears that a very small amount of ovarian stroma goes a great way. Menstruation often continues, however diseased the ovaries may be, and Atlee reports two cases in which one ovary having been removed, the other became so cystic as to need *repeated tappings*. Yet each woman not only menstruated, but conceived and gave birth to a child.[1] In one of these cases, a cyst of the sole ovary, the other having been removed many years previously, was tapped twice before conception, twice before delivery, seven times afterwards and then was extirpated. Robertson[2] mentions a remarkable case in point, which occurred in his practice. He removed both the ovaries, which were diseased, of one of his patients, yet she afterward conceived and gave birth to a child. His explanation is that he must have left, unwittingly, a scrap of healthy ovarian tissue in one of the stumps. But on the other hand, the ovum could not have descended into the womb, unless the lumen of one tube had reopened at the point where it had been sealed up by the adhesive inflammation set up by the ligature.

With regard to the third problem: Supposing simply therapeutic measures fail, and the physician is driven to surgical interference, must he, after breaking up the adhesions, always extirpate the now free uterine appendages? Most surgeons contend not only that the diseased appendage should be removed, but also that both appendages should be extirpated, even if one alone is diseased. This advice is given on the ground that the healthy one is liable in its turn to become affected. My own course, under such circumstances, would be never to remove the healthy appendage unless the menopause had been established already, or unless there obtained a good reason for hastening it on. On the other hand, should both ovaries be intrinsically diseased and their tubes contain pus, I would always remove both uterine appendages in their totality, no matter what the age of the patient might be. Generally, however, the pus is limited to the tubes, and in that case sometimes one ovary, barring its adhesions, which, of course, must be broken, is healthy enough to be left behind. In such a case the tube alone, if possible, should be removed, and not the healthy ovary or the healthy ovaries—if both happen to be sound. Further, rather than wholly remove all ovarian stroma, I should try in such cases to leave behind even a small fragment; for, in several of my cases in which a piece of an ovary, not larger than a bean, was left behind, not

[1] Atlee: Ovarian Tumors, pp. 38 and 39.

[2] British Medical Journal, September 27, 1890, p. 722.

any menstrual or sexual changes whatever took place in the woman. Should the uterine appendages be merely adherent, and not intrinsically diseased to any extent, I would as a rule, during active menstrual life, release them, and perhaps extirpate the worse of the two, but not both of them.

My reasons for this conservative treatment are, that the complete extirpation of these organs, as I have shown before, tends to destroy the sexual feeling, to disturb the mental equilibrium, and to produce prolonged nervous perturbations, all of which come from the abrupt and untimely suspension of menstruation. There is yet another very excellent reason for this advice: The majority of physicians, and all laymen, look upon women deprived of their ovaries as unsexed: Just as castration is in the male, so the analogous operation is in the female deemed a sexual mutilation to which common consent attaches a stigma. No woman would marry a eunuch, and few men would wed a woman deprived of her ovaries. In my own practice I have known of several very sad cases of marriage engagements broken off, of marital infidelities, and of bitter estrangement between husband and wife, all of which would have been avoided had one ovary been spared, or, indeed, had a mere fragment of one been left behind.

Upon the question of the removal of the uterine appendages for the cure of insanity and of epilepsy, I have very few words to say, but they are all based upon cases occurring in my own practice. If the insanity is limited to periodic outbreaks, strictly ovarian in their character and with the menstrual flux as a storm-center; if the epileptic fits are preceded by an ovarian aura—that is to say, if they pivot around the monthly period and appear at no other time—the removal of the appendages, by suppressing a pernicious menstruation, usually will bring about a cure in either disease. But when these organs are extirpated merely as a panacea *per se* for these mental and neural disorders, irrespective of an ovarian origin, the operation affords no relief. At the same time I am free to confess that, in order to stamp out insanity, I am strongly inclined to advocate the legal castration of every man and of every woman who is the unfortunate victim of this hereditary curse.

CLINICAL LESSONS.

Three Cases of Remarkable Spinal Anterior Curvature with Mental Aberration.

BY S. WEIR MITCHELL, M.D.,
PHYSICIAN TO THE ORTHOPEDIC HOSPITAL AND DISPENSARY FOR NERVOUS DISEASES, PHILADELPHIA.

I SHOW you to-day two out of three cases of somewhat unusual character. The third member of the group I have not here. You cannot fail to observe at once the attitude of this girl. Let me ask your attention to this singular case. The curvature came and grew complete within a few months. It is still remarkable, and was far more so. The whole spine was bent, the belly protruded, and the head carried back, to enable her to see objects on a line with the eyes. There was no possibility of straightening her either by passive efforts or through volition, but these attempts gave rise to no pain. The spine seemed to be rigid, and she could neither make it erect nor fully bend to one side; the head also possessed small power of rotation or flexion, while the neck muscles were not rigid. With gain in her mental state, these peculiar symptoms have become notably less.

This description applies nearly throughout to the man, except that his spinal difficulty was altogether above the lumbar region. The girl's case is, no doubt, largely hysterical, and so also is that of the boy who had in an extreme degree the spinal peculiarity.

The man's condition hardly justifies the label hysteria; nor did that of two others alluded to later.

Here, then, are three people, a boy, a girl, and a man, all more or less insane, and all showing a disorder of the vertebral column, which comes with the mental state, and lessens as this gets better, and is not due to appreciable organic disease.

How very strange are the postures is shown in Dr. Taylor's clever sketches. In a large experience of all forms of mental disorder I have never seen elsewhere anything just like these in the pronounced character of the curves and in the immobility which they manifested.

The boy's case is less distinct, but the resemblance to the others suffices to justify the grouping. Perhaps this collection of symptoms may be accidental. The chance grouping together of symptoms in a trio of cases may readily deceive one into the belief that we have before us an undescribed clinical type. I have been patiently reticent, and have long withheld these three cases from publication, in the hope of seeing others like them, which might permit of a larger numerical comparison. My patience has not been rewarded with success, and I am now tempted to call attention to a peculiar set of symptoms, with the hope that others may contribute like cases to my meager list, so that a larger experience may become possible. I incline to the belief that the cases I here exhibit illustrate a novel clinical group, which may be non-hysterical or may assume the hysterical type.

I ought to say, also, that in the past I have met with at least three patients who had this collection of symptoms, but of these I have no notes, as they were seen long years ago, and only in consultation.

The question is now in this form: Is there a clinical type, hysterical or not, characterized by

mental failure, physical weakness, retinal changes (?), and rapidly evolved spinal curvature, extreme in degree and otherwise unusual in type, not due to organic vertebral disease?

CASE I.—F. B., female, thirteen years of age, was brought to Dr. Mitchell's clinic, April 4, 1890.

FIG. 1.

The family history is negative. The child was born at term. The labor was easy, and instruments were not used. She was breast-fed. She began to walk at thirteen months, and to talk at about the same time. She has never had any serious illness, except pneumonia, seven years ago. She developed well, mentally and physically, until about eleven months ago, when her mother noticed that she would have fits of causeless crying and great depression. At times she would convulsively break out in attacks of violent anger. While previously she had always been number one in her school, she soon lost all interest in study, fell to the foot of the class, and finally refused to go to school at all. She sits all day, careless and unconcerned as to what is going on around her. She will have nothing to do with her old school-friends, shows no affection for her parents or brothers and sisters, and never speaks except in answer to a question, save that sometimes she talks to herself, and, as if under the influence of an hallucination, will cry out, "What do you want?" "Get out of here," etc. She has largely lost the sense of personal cleanliness, and is dirty in her habits.

Her general bearing is striking. The abdomen is thrown forward, the shoulders back, the right one being much higher than the left, while the head is thrown forward, the chin at times resting upon the chest. The left thumb is strongly flexed, the forearm pronated, and the arm rotated inwardly. The entire spine bends stiffly, and it appears impossible for her to stand erect. There is no evidence of spinal bone-disease, no angular curvature, no pain on pressure, no sensitiveness to heat or to cold. While there is quite a little general muscular weakness, there is no true palsy, and except for slight pallor, she is well nourished. There are occasional slow lateral movements of the head, and the hands are slowly passed over each other. Whether these movements are purposive or automatic cannot be determined. The fingers of both hands can be passively hyperextended.

Her expression is fatuous and idiotic. She seems to take no notice of her surroundings, and is absolutely without interest in anything. Her replies to questions are silly, her speech slow and somewhat thick.

She sleeps well now, but formerly badly, and seemed to fear the dark. Menstruation has never appeared, though she is quite well developed. Her appetite is fair. The urine is normal. The knee-jerk is slightly large, but not spastic. Sensation is normal.

Dr. de Schweinitz examined her eyes, and reports: "Concomitant convergent squint. No swelling of disc, but there is a diffuse retinal haze, especially marked above and below the discs. Both eyes are hypermetropic."

The patient was seen again in February, 1893. Her mental condition was even worse than before. She never spoke except in a silly fashion, and had to be attended to like an infant. She still has outbursts of anger. Physically she was in about the same condition as already described, except that the protrusion of the abdomen and the large anterior curvature of the lumbar and lower dorsal spine were less marked.

FIG. 2.

September, 1893. She has steadily but slowly improved since the last date, with lessening curvature, but the gain in the physical aspects of the case far outstrip the gain in the mental condition. The eye-grounds are better.

CASE II.—L. W., male, twenty-five years old, married, a mill-hand, came to the clinic November 22, 1889.

The family history is negative. The patient denies venereal disease, and no evidence of it is discoverable. He has never used liquor at all and tobacco only moderately. He has always been well until June, 1888, when his employer discharged him on the ground of mental unfitness for work. He himself complained and complains of backache and headache. He says that he often hears voices of invisible people talking to him, but he cannot remember what they say. He denies that he ever gets despondent, and is totally unconscious of any mental trouble.

His general bearing is similar to that of the first case described, but not so marked. The eyes are held half closed. The gait is shuffling and slow, and the right foot is much everted. Station is good. The knee-jerk is large, but not spastic. Sensation is normal. There is no paralysis.

His expression is dull and sleepy. Mentally he is stupid. He understands what is said to him, and replies intelligently, but often his statements cannot be relied on. He will unwittingly falsify. He has lost all interest. His inability to work is evidently due to mental insufficiency and not to the pain of which he complains. He is harmless and never subject to fits of anger, and on the other hand he is without affection. In other words, he is in a condition of dementia.

The abdominal and thoracic organs are normal. The eyes were examined by Dr. de Schweinitz, who reports that there is a slight retinitis.

He was seen again some months later, in the spring of 1890, and had improved sufficiently to do odd jobs, but still was unfit for continued work. The spinal curve was far less and the mobility nearly normal. The eyes were reported to be materially better. He was far more cheerful, and observed with interest that he was more erect and did not have to tilt his head back to get a view of the faces of people. At this time there was a complete reexamination, which added nothing to the simple statements already made.

CASE III.—L. R., male, sixteen years of age, was sent by Dr. Pearce, of Steubenville, Ohio, in March, 1890. The family history is negative. The patient suffered no injury at or near birth. He has never had convulsions or any other serious acute illness. He has always been very retiring, seldom speaking unless spoken to, never mirthful, averse to society, and not fond of amusement. He attended the public schools for six or seven years, but was always careless and indifferent about his studies, and as time passed grew duller and duller. About two years ago his comrades annoyed him so much that he was taken from school, and for a while he was taught at home. Finally, however, all efforts at education had to be abandoned. He still possesses intelligence enough to read, but rarely does so. He understands perfectly all that is said to him, but is morose and irritable. He cries a great deal and is without affection. He is extremely disobedient and without fear of punishment. He protests that there is nothing the matter with him, says dramatically that he will live a thousand years, and that he wants to be left alone. He often gets upon his hands and knees on the floor, and turning his head in an objectless manner toward the ceiling remains so for a considerable time. His usual position is sitting with the thighs strongly flexed on the abdomen, the legs flexed on the thighs, the arms clasped around the legs, and the head down, with the chin resting upon the knees. This knotted position he maintains for hours. At times he suddenly rises, hops, or runs around the room, whining the while, always going to the left if he meets a table or chair or other obstruction. He will stop suddenly, jump up and down many times, frowning and looking horror-stricken, and then walk away

FIG. 3.

and sit down in his accustomed attitude. He objects much to being touched, saying that it hurts him, but deep pressure does not give as severe pain as a light touch. His hyperesthesia is mental, not peripheral. He is reluctant to talk to anyone or even to answer a question, and when he does so he repeats words, a clause, or even a sentence several times, so that frequently it is difficult to comprehend what he says. He is, however, sometimes boisterous, and will swear roundly and scold everyone around him, and squirm and jump and throw himself about, and finally fall to the ground exhausted, panting for breath, grasping at his chest as if in deadly fear of suffocation. He complains bitterly of new clothing, saying that it is too tight and binds him. He has great trouble in dressing and undressing, but objects strongly to being assisted. He will apparently forget what he is doing; will put on a shirt and not remember that a coat should follow. The same peculiarity is shown in eating. It is no unusual thing for him to sit at table for hours muttering to himself, and only now and then taking a mouthful of food. So bad is this at times that he sometimes suffers from want of

nourishment. He goes to stool of his own accord, but may be found there hours afterward. The character of his sleep varies much; sometimes it is quiet and restful, at others much broken.

The illustration shows well the peculiarities of his usual position when standing. The legs are slightly flexed at the knees, the abdomen thrown forward, and the shoulders rounded. There is an increase in the normal antero-posterior spinal curvatures and slight left lateral curvature. There is no evidence of bone-disease. There are also apparent slight curvatures of the legs at the knees. They can be overcome by passive, but not by active motion, and the spine can by no means be straightened. The skin is yellowish and harsh. The knee-jerk is lessened, but distinctly reinforcible. The thoracic and abdominal organs are normal. Careful watching has failed to detect evidence of masturbation. The eyes appear to be normal.

When last heard from, three years later, he had improved considerably, the change coming on rather suddenly in March of this year. He said one day that he had been out of school so long that he would be behind the boys, and asked for his books. A teacher was obtained for him, and he became obedient and cheerful and desirous to study. The gain has been happily continuous, and, as in the other cases, the change in carriage and the lessening of spinal immobility has gone on as the mental state has become clearer.

ORIGINAL LECTURE.

CYSTITIS.[1]

By CHARLES G STOCKTON, M.D.,
of Buffalo, N. Y.;
Professor of the Practice of Medicine, Buffalo University.

The urine of this woman is characteristic of a mild cystitis. She entered the hospital about a month ago suffering with facial erysipelas, for which she received the ordinary treatment, making a good recovery. Directly after the passage of a catheter, however, she began to suffer from irritability of the bladder. She had a frequent, almost continuous desire to urinate, with a sense of burning and vesical tenesmus. The examination of the urine at that time verified the diagnosis of cystitis, which the symptoms suggested. The patient left the hospital, but has been compelled to return. She has been about the house, not confined to bed, passing urine every fifteen minutes or half-hour. The urine contained epithelium from the bladder, pus-corpuscles, some free red blood-corpuscles, and mucus. In a well-marked case of cystitis the urine contains such a large amount of mucus that it will cling to the bottom of the vessel when the urine is decanted. The color depends largely on the degree and nature of the inflammation. If it is a mild catarrh, the mucus is whitish. If there is extensive and severe catarrh, it is grayish or perhaps tinged with red. If the urine decomposes in the bladder, there is the well-known ammoniacal odor. It is often the case that the irritation that gives rise indirectly to ammoniacal decomposition of the urine is a highly acid state of the urine, which contains crystals of oxalate of lime and of uric acid, until the cystitis assumes the septic form.

The question naturally arises: What is the cause of the cystitis in this girl? Was it the passage of the catheter? Experiments on animals seem to show that the introduction of microörganisms into the bladder is not sufficient in itself to set up cystitis. If, however, the bladder has been over-distended so as to produce a certain degree of paralysis of the muscular wall and an injury of the mucous membrane, then the microörganisms will find a proper seat for development, and cystitis will result. When cystitis follows the passage of the catheter, you may accuse yourself of carelessness in having introduced septic germs with the catheter, but you must also look for the predisposing cause that rendered the bladder susceptible. One of the most common predisposing causes of cystitis is the distention of the bladder from urine too long retained. If a person has not passed water for six or eight hours or longer, the ultimate cause of the retention should be inquired into. Palpation and percussion should be practised, to determine the size of the bladder, and the patient's sensations should be taken into consideration. In this patient's case there was undoubtedly a retention of urine that called for the use of the catheter and that rendered the bladder liable to cystitis; but the question arises: Was the catheter septic, or did the bacteria enter the bladder at a later time, and after the cystitis was well established? Probably the catheter was not septic—at any rate it was undoubtedly fairly clean. Even an aseptic catheter may set up cystitis in a bladder that has previously been over-distended, though manifestly a dirty instrument is much more likely to cause trouble.

The urine, you notice, is smoky, an appearance characteristic of cystitis, with the presence of blood. There is also a cloudiness of the urine, which would undoubtedly precipitate if the urine were allowed to stand for some hours, and under the microscope would be shown to consist of pus, epithelium, and mucus. I have alluded to the ammoniacal reaction of the urine in cystitis. The urine is not ammoniacal when secreted, but, on account of the presence of bacteria in the bladder, a decomposition of urea occurs, forming ammonium carbonate. I have already said that one of the commonest predisposing causes of cystitis is a highly acid and irritating urine. After ammoniacal decomposition has taken place the reaction is changed, but the urine is equally irritating, and the indication is to keep it at the neutral point. This cannot be determined by examining the urine at a daily visit; the urine must be tested with litmus paper every time it is voided, and the medication should be governed accordingly.

We must remember a sign that is especially liable to be seen in old people. This is the gradual trickling away of urine; this indicates not that the urine is passed as it is secreted, but that the bladder is over-distended, the enlarged prostate acting as a dam over which the urine runs slowly.

In the treatment of cystitis not only must the urine be kept neutral, but it must also be kept diluted, and hence bland. Large amounts of absolutely pure water, distilled, or rain-water, must be used. Mucilaginous drinks

[1] A clinical lecture delivered at the Buffalo General Hospital.

also have some curious influence to make the urine bland. The mucilage itself, of course, does not pass out with the urine, but probably some constituent of the mucilage does. Balsamic preparations also render the urine bland. The oil of sandalwood is perhaps as useful as any. It may be given in capsule, gtt. v–x, every four hours, until the urine is moderately impregnated. Improvement likewise follows the use of less balsamic diuretics, such as buchu and uva ursi. Fluid extract of buchu, fifteen minims (one cubic centimeter), every two or three hours during the day and perhaps once during the night, acts as well as any of this class.

The remaining treatment of cystitis is local; this means washing out the bladder. A clean catheter is used; the urine is first drawn off, then the bladder is washed with distilled water so as to remove shreds of epithelium and mucus. Following this, astringents, stimulants, or sedatives may be used according to the indications of the case. I was an interne in this hospital when the local treatment of cystitis was first talked about in this country. I well remember seeing patients lie here month after month without any attempt at local treatment, and I remember one boy whose bladder I had to wash out every day, and I looked upon this treatment as a hardship and as quite heroic. This patient had a gonorrheal cystitis, and he became worse under treatment as the bladder was washed out with a strong astringent solution. At the time I condemned the method of treatment, but now I have no doubt that, if milder solutions or even distilled water had been used, the patient would have recovered under this treatment. He improved somewhat after the washing out of the bladder was discontinued, but he did not entirely recover.

One of the best preparations to use in washing out the bladder is boric acid, making a saturated solution in cold water, then heating the water to about the temperature of the blood and introducing it gradually. If the solution is allowed to run in quickly, it will induce a spasm of the bladder. The next day after this treatment a solution of hydrogen dioxid (25 per cent. of the fifteen-volume solution) may be used. The balsams may be suspended in water by the aid of magnesia and introduced after filtration. I do not know exactly how to state the strength of the solution. I usually prepare it by rubbing up a dram of oil of sandalwood with magnesia, putting this on a filter-paper, and passing through it a pint of distilled water. Just how much of the sandalwood remains in solution I do not know.

There is one other important point in the treatment of cystitis—rest in bed. This girl was walking about the ward when I took charge of her, and passing water every half-hour. She now rests in bed and passes water every two or three hours. The diet should be perfectly bland. Milk is often the best food, but it sometimes causes fermentation in the stomach and upsets the system. Vegetable and starchy foods are usually admissible, but little or no meat should be given. Coffee and tea, as well as all condiments, spices, and salt, should be excluded. One often goes astray in thinking that milk-diet should always be used in such cases.

The Northwestern Ohio Medical Association will hold its forty-seventh semi-annual meeting at Toledo, Ohio, December 14 and 15, 1893.

CLINICAL MEMORANDA.

A CASE OF HYPEREMESIS GRAVIDARUM TERMINATING IN RECOVERY AFTER AN INDUCED ABORTION OF TWINS.[1]

BY CLARA T. DERCUM, M.D.,
OF PHILADELPHIA.

VARIOUS and many are the theories that have been proposed in regard to the etiology of hyperemesis gravidarum, but as a matter of convenience they may be divided into two classes. The first is that in which there are local lesions present, such as displacements and flexions of the uterus, erosions, lacerations, and various structural degenerations of the cervix uteri. Among this class the various lesions of the gastro-intestinal tract must also be included. The other class comprises those cases in which no visible or symptomatic local lesions exist. The simple uncomplicated cases that occur in women of a neurotic type are considered as neuroses. In the first class of cases treatment should be directed to the local lesions present, and their cure generally results in an amelioration, if not an entire cessation of this affection. In the second class, however, treatment, to be of any avail, must be of the most diverse kind, and must be chiefly directed to the hyperesthetic nervous system, with a view of sustaining, strengthening, and increasing its resistance to the added strain. Under the burden of our modern civilization the sensitive nervous system is generally the first to suffer, and consequently we have developed a state of lessened resistance, which perhaps may be better expressed in the more familiar term of neurasthenia. Under ordinary conditions the individual may not be conscious of this state of lowered vitality, but when pregnancy occurs in such a one the delicate nervous apparatus shows an abnormal sensibility to the physiologic change that manifests itself in various reflex phenomena. When in connection with this lessened resistance there exists a local lesion either of the organs of generation or of the gastro-intestinal tract, the effect will be all the more marked.

In the ordinary vomiting of pregnancy the food that has just been taken is vomited without much effort, and there is an absence of nausea and ptyalism, thus showing that the higher nervous centers are not involved in the action; it is merely a reflex act, peripheral in origin, the afferent impulses proceeding from the stomach; it does not extend beyond the vomiting and respiratory centers in the medulla. On the contrary, however, when nausea and ptyalism coëxist with this act the afferent impulses proceed from the higher nervous centers, and the act of vomiting occurs independently of impulses received from the stomach. Therefore, as nausea and ptyalism are always present in any case of severe vomiting of pregnancy, it shows that the nervous system is mostly at fault, and that there is a lack of coördination between the higher nervous centers that manifests itself by this abnormal action of the alimentary canal.

I shall not attempt to enumerate the drugs that have been used in this affection; their name is legion; it is enough to say that those remedies that act as sedatives

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[1] Read before the Alumnæ of the Woman's Medical College May 5, 1893.

to the nervous system, such as bromids, chloral, and opium, have yielded the best results.

It is understood that if there be a local lesion present treatment must, if possible, be directed toward its removal. Varied, strange, and amusing, indeed, are some of the accounts of the treatment of this disease. A Frenchman reports a desperate case successfully cured by hypnotism; a Russian, the cure of an equally serious case by injections of morphin into the fetal sac.

I shall now report a case that came under my own observation. The patient, M. T., is an American, of pronounced. neurotic type; her family record is not good, as shown by the following history. The father died of pulmonary tuberculosis shortly before the daughter's birth; one brother has since died of the same disease, and another one is at present suffering with it. A sister died of convulsions (cause unknown) during a pregnancy; the mother is still living, and has always been an inveterate alcoholic. The personal history of this woman is as follows:

She had always been healthy until puberty, which occurred at sixteen years of age; she then had a violent attack of chorea, for which she remained at the Orthopedic Hospital three months under the care of Dr. Wharton Sinkler; she was married at eighteen, and shortly became pregnant. Up to the eighth month of pregnancy vomiting and ptyalism existed to a profound degree. About one year after the birth of her child she had an attack of typhoid fever. One month after recovery from this disease she again became pregnant, and vomiting and ptyalism again made their appearance, but in a more aggravated form, so that at one time her attending physician, the late Dr. Elijah B. Shapleigh, considered the advisability of an abortion, but as her condition gradually improved the idea was abandoned. I saw her on the 18th of March, 1892. She stated that she was pregnant for the third time, and that she thought she had been so for about six weeks, as she had seen nothing of her menses since the 10th of February. Vomiting, nausea, and ptyalism had been present for about four weeks, and these derangements had so steadily increased in severity that not even water could be retained on the stomach. The mere sight of water was sufficient to cause a flow of saliva, and then the effort made to swallow it would bring on an attack of vomiting. This flow of saliva was so profuse that, without exaggeration, in a few hours a quart could be collected by allowing it to dribble into a basin. Calomel, cerium oxalate, bismuth subnitrate, wine of ipecacuanha, cocain hydrochlorate, soda-water, champagne, blisters and sinapisms to the epigastrium; morphin and atropin, hypodermatically; bromids and chloral by the rectum, were successively tried, without producing any effect whatever; the vomiting and ptyalism continued incessantly, both by night and by day, and independently of either food or drink. On the morning of the 22d rectal feeding was begun, peptonized milk being used for the purpose; the woman's pulse now rose to 120, and the prostration was extreme. Her physical appearance was most abject; she lay in a profound stupor, only arousing to perform the almost incessant act of vomiting, and during the intervals of the vomiting the saliva dribbling from her mouth over everything. She had marked Cheyne-Stokes respiration, and it was impossible to rouse her.

Dr. Eleanor C. Jones and Dr. F. X. Dercum saw the woman with me on the morning of the 23d. The advisability of performing an abortion was discussed, but we decided to wait a little while before resorting to such an extreme measure. The following plan of treatment was instituted: Opium, bromids, and chloral by the bowel were ordered, to act as sedatives to the nervous system; rectal feeding with peptonized milk, liquid peptones, and whiskey; hypodermatic medication of atropin, strychnin, and digitalis to support her strength. Two days in succession the cervix was dilated with rapid dilators, and iodin was applied to the canal and to the vault of the vagina. High rectal injections were also given, in order to move the bowels thoroughly, so as to be sure that the vomiting (as the matter ejected sometimes had a characteristic fecal odor) was not due to obstruction of the bowel. The food and medicines given by the rectum were retained and the patient soon began to show some signs of improvement, as she vomited only from about fifteen to twenty times in the twenty-four hours. Dr. Joseph Price saw the patient with me on the 26th; he approved of the treatment pursued, and as her condition was slightly better advised that an abortion be deferred. On the 28th she refused further medication by the hypodermatic method, and the medicines that had been so administered were continued by the bowel, the dosage being doubled. The patient ceased vomiting suddenly on April 1st, after partaking of a lamb chop; she was, however, still partially nourished, as well as medicated, by the bowel. She gradually improved, and by April 6th all medicine and food were taken by the mouth and were retained.

I was again summoned to see her on April 25th, vomiting, ptyalism, and nausea having recommenced on the 23d. The same treatment was again resorted to, but this time without any result. She rapidly grew worse, and her condition again became alarming; then the same stuporous state as formerly developed, with occasional intervals of violent delirium; at times her suffering seemed unbearable, and as she threatened to commit suicide she was closely watched. Active interference was postponed from day to day with the hope that this condition would cease as suddenly as before.

On May 8th, after a consultation with Dr. Joseph Price, an abortion was performed. For this purpose two rubber catheters were introduced to the fundus and allowed to remain, the vagina being packed with wool to keep them in place. On the 10th, twins —a boy and a girl—in separate sacs, and from ten to twelve weeks old, were delivered; the placental tissue was adherent; and on the 11th, without etherizing her (for she was in a very precarious state), it was detached with the aid of a curet. The uterus was thoroughly washed out with a solution of mercuric chlorid 1:4000. Although the vomiting, nausea, and ptyalism ceased immediately after the expulsion of the contents of the uterus, there was now such extreme prostration and emaciation as to make recovery exceedingly doubtful. Respiration was 50, the pulse 180, the temperature 102°. The treatment was now chiefly directed toward improving the strength, stimulants being freely ordered for the purpose. The woman continued in this

condition, with but slight variation in respiration, pulse, and temperature until May 16th, when she had a severe chill, her temperature rising to 104°. She complained of intense pain during urination and defecation, and a physical examination revealed a mass about the size of a hen's egg in the right broad ligament. Large doses of quinin were given her, and cantharidal blisters were applied to the iliac regions, with large douches of hot water for the vagina. An ice-bag was placed over the precordial region, as the heart's action was violent and rapid; this soon made an impression upon this complication. For several weeks following the abortion the patient had various delusions, and at times was so violent that it was difficult to restrain her and impossible to keep her in bed; but as time passed and she regained strength these gradually disappeared. She made a complete recovery in almost two months.

It seems remarkable in this case that after vomiting had once ceased and apparent recovery had taken place vomiting should have again recurred. I know that it is a physiologic law that the child goes on developing at the expense of the mother, no matter what her physical condition may be; but nevertheless I would offer this explanation, that in the absence of all nourishment for several weeks the fetuses developed very slowly, and therefore for a little while the cause of these nervous manifestations remained in abeyance, but as the nutrition of the mother improved and their development went on in a more vigorous manner the same conditions presented themselves. I am also of the opinion that if there had been but a single pregnancy it would have gone to full term as previously, but the reflex irritation, produced by the more rapidly developing uterus under the conditions mentioned, being so much greater, the nervous system could not resist it. At the seventh week of pregnancy the uterus was so much larger than one would expect at that period that she was told that she must be mistaken in regard to the time, *i. e.*, was further advanced than she thought, but she assured us positively that she was right, and of course the possibility of a twin pregnancy never occurred to us.

A CASE OF ANKYLOSTOMIASIS.

BY W. L. BLICKHAHN, M.D.,
OF ST. LOUIS.

CASES of ankylostomiasis (*Egyptian Chlorosis, St. Gothard Tunnel Disease*) are certainly rare, if not unknown, in the United States. I have been unable to find a record of a previous report of the occurrence of ankylostomum in this country.

The patient whose case I report is a German carpenter, a native of Oberhausen, near Essen, in the Rhineland, and had been a resident of America seventeen months when he came under observation at the St. Louis City Hospital.

I think there is but little doubt that he brought his parasites with him, as ankylostomiasis is not so rare in the region of the Rhine whence he came. It was at first thought that he had contracted his disease here, having been employed in a brick-works in St. Louis. He claims to have been in perfect health before coming here. He sailed from Bremen, landed in New York, and came direct to St. Louis, arriving May 1, 1892. His first employment was in car-shops, which he left to work in a brick-yard, where he was engaged in digging the clay. After several weeks' work his legs became sore, in consequence of what, from his description, seems to have been a pustular eczema, and he quit work. He began again in a lumber-yard, giving up the latter in a short while, as the labor was too heavy for him; he was then employed in a collar-shop.

During his first summer, and while working in the brick-yard, he suffered with digestive disturbances, ascribing his derangement to the use of ice-water, to which he was unaccustomed. His friends noticed that he began to lose the fresh and the rosy color that he had when he arrived. He felt tired and weak, but continued working, growing paler and weaker, having pains in his stomach and bowels, with variable appetite and frequent diarrheas until June 6, 1893, when he took to his bed, a little more than a year after his arrival and not quite a year from the beginning of his gastro-intestinal symptoms, which have continued up to date. He was treated privately until he entered the hospital at the end of the past September.

Parasites.
(Naked-eye appearance.)

Ova. (Zeiss, DD, oc. 2.)

My attention was called to him as an example of a case of extreme anemia the etiology of which was obscure.

Physical examination was negative, with the exception of pain on pressure just above the umbilicus. The man was extremely pale. He presented not a waxy or greenish or yellowish hue, but a simple pallor. He was not emaciated, the outlines of the body being well rounded, but he was extremely weak. His appetite was fair, and because of frequent severe pains after eating, especially solids, care was necessary in the selection of his diet. The bowels were variable; as a rule, the discharges were rather thin and varying as to frequency, the color usually brownish to black; there was no emesis, and no hemorrhage. There was slight edema of the right ankle. Urinalysis was negative. The blood was very thin—"800,000 reds to the cubic millimeter" was the memorandum in the case-record. I subjected the blood to a careful microscopic examination. No malaria had been suggested as the cause of the anemia. I could find no plasmodia. The blood resembled that of pernicious anemia. There was marked leukocytosis and poikilocytosis, and great variations in size of the red blood-corpuscles. There were many large mononuclear and multinuclear leukocytes, the lymphocytes being in the minority. The α and γ granulations (Ehrlich) were sufficiently numerous to awaken the suspicion of the case being one of myelogenous leukemia.

As intestinal parasites, especially the one under consideration, are frequent causes of extreme anemia, and as the examination of the stools had been overlooked, I secured some of the feces, which were quite fluid, and

the microscope very promptly revealed the presence of large numbers of the ova of the ankylostomum.

I presented the case to the Verein Deutscher Aerzte on October 13th, detailing the case and demonstrating the eggs.

An attempt to develop the parasite from the ova was unsuccessful, but a dose of filix mas furnished large numbers of the parasite, which varied from seven to fifteen millimeters in length, being less than a millimeter in diameter.

I examined quite a number of the worms, but found no males—those found seemed all to be females. Probably the next batch passed may have been made up more exclusively of males. This variation as to the predominance of one sex over the other has often been noted, the severity of the anemia seemingly being the greater when the female worm predominated.

The clinical picture of the case tallies fairly well with the clinical phenomena usually described: Extreme pallor, weakness without emaciation, the body being well-rounded (fat, not edema), some slight rise of temperature, gastro-intestinal disturbance, no kidney-complications, neither enlarged spleen (Völkers reports splenic enlargement in two out of three cases) nor liver.

A number of observers have noted hemoglobinemia, but no leukocytosis. The latter was marked in the case under consideration, as it was in a case reported by Fränkel, in which "the blood was leukemic, and at the autopsy the bones resembled the condition characteristic of myelogenous leukemia." The same was noted in a post-mortem record of Cohnheim (diagnosis: Pernicious Anemia).

It has been frequently urged, and all clinical microscopists and teachers advise, that in all cases of anemia the stools should be subjected to microscopic scrutiny. If the report of this case will awaken a more general interest in clinical microscopy, without which the diagnosis in this instance could certainly not have been made, it will have served its purpose. In looking over the literature I found information in an article in the *Reference Handbook of the Medical Sciences*, article Nematodes, vol. v, page 134, by Charles E. Hackley, to the effect that the diagnosis must be made by the symptoms, as neither the ova nor the parasites had as yet been found in the dejecta, though it was possible that a careful microscopic examination of the stools *might* reveal either. In this case, and so far as I can learn in all cases, ova are plentiful in the stools; the parasite, on the contrary, is rarely or never found except after the use of remedies used for their destruction.

Frequent examinations of the stools are necessary for weeks after a supposed cure, to be certain there are no ova and that the cure is one in reality.

For the privilege of examining and reporting this case I am indebted to Dr. H. Marks, Surgeon-in-charge of the St. Louis City Hospital.

4049 OLIVE ST.

Hospitals Acquire No Lien against a Railroad.—Medical attendance and board furnished by a hospital to an employé of a railroad company, who has been injured and disabled in its service, are not, according to a decision of the United States Circuit Court, "supplies necessary to the operation of the railroad," within the terms of a statute which gives a lien therefor.

A RENAL CALCULUS.

BY RICHARD SLEE, M.D.,
OF SWIFTWATER, PA.

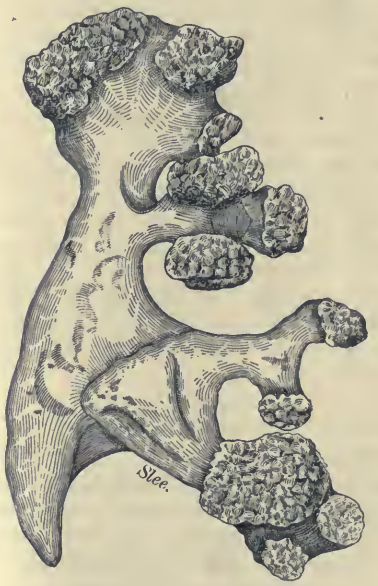
IN conducting post-mortem examinations pathologists frequently expose existing conditions calculated to make the surgeon sigh to think of the justifiable opportunity for surgical work *lost* through the absence in many cases of tangible symptoms.

The subject of this sketch is a fair example of such a case.

An Italian, about forty-five years old, was recently admitted to the Methodist Episcopal Hospital of Brooklyn, and placed in the First Surgical Division under the care of Dr. Louis S. Pilcher.

He was suffering from *old* prostatic and urethral disease. A tight urethral stricture had for many years given him considerable difficulty in micturition. At the time of his admittance he passed all urine through a number of perineal sinuses, and his general condition was exceedingly poor.

The perineum was perforated by a number of sinuses, extending in various directions, with pockets here and there containing urine, débris, and slough.



Extensive curetting was required to remove the sloughing tissues and place the parts in a condition to justify an expectation of repair. Operative interference was, however, a "forlorn hope" in his case, and he died several days later from asthenia.

The post-mortem findings of interest were confined to the genito-urinary tract, which was removed *en masse* for preservation. The urethra was found to be the seat of several strictures; one very low down was tight enough to prevent the passage of a filiform bougie. The prostatic body was entirely destroyed by the sloughing process; the bladder was perforated on its posterior surface near the neck, and through this opening the urine made its escape.

The bladder was greatly dilated, and its walls were

enormously thickened; the mucous membrane bore no resemblance to the normal structure, having large phosfatic masses of deposit scattered here and there over its surface, and being markedly necrotic where it was not the seat of this deposit.

The ureters were much thickened and dilated at all points, permitting the introduction of one's little finger, and presenting the appearance of an exaggerated varicose vein. Each was capable of holding about half a pint of urine.

In the left kidney was found an enormous calculus, from which I made the accompanying drawing (actual size), weighing 350 grains, and composed principally of calcium salts, with a spiral-shaped band of uric acid deposited on the body or the pelvic portion. The body of the calculus is dense in structure, while the branching processes formed in the calices are tufted with large crystals, the whole suggesting in its appearance a sprig of coral.

The horn-like projection at the lower extremity of the drawing was lodged in the upper extremity of the ureter, and the calculus was found in about the position shown with relation to the anterior abdominal walls.

The working portion of the kidney was entirely destroyed, the mass consisting almost entirely of fibrous tissue, which was tucked in and around the irregular surfaces of the stone and was firm enough to retain its shape after removal of the calculus. Some free pus was found in the pockets. The necrotic process, however, was not as active as one would expect from the size, shape, and structure of the calculus.

The left kidney was practically normal, save for a well-marked compensatory hypertrophy.

Renal calculi are by no means rare. This, however, seems rather an unusual one in size and shape, and, I think, worthy of record. Several that I have come across have been almost as large, but the deposits were chiefly confined to the pelvic portion of the kidney, and did not make as perfect a cast of the cavities of the organ as this.

MULTIPLE PAPILLOMATA IN A CHILD:

Tracheotomy at Four Years of Age; Retention of Canula Thirteen Years; Evulsion of Multiple Laryngeal and Pharyngeal Neoplasms; Closure of the Tracheal Fistule by a Cutaneous Flap; Recurrent or Repullulant Growth at the Anterior Commissure of the Glottis.

BY J. SOLIS-COHEN, M.D.,
HONORARY PROFESSOR OF LARYNGOLOGY, JEFFERSON MEDICAL COLLEGE.

THIS instructive and long-time neglected case was sent to my clinic in April, 1892, by Dr. Harter, of Maytown, Pa.

The patient, a girl seventeen years of age, but less fully developed than many a child of fourteen or even less, was completely aphonic, and was wearing a child's tracheotomy-tube.

Her story was that at four years of age, after suffering frequently with what was supposed to be croup, tumors in the larynx were diagnosticated by the late Dr. John Atlee, of Lancaster, Pa., than whom there have rarely been better surgeons. Dr. Atlee performed tracheotomy and inserted a double canula. This appliance was used for eleven years without any withdrawal of the outer tube by her attendants, when it was found to have become corroded. Then a new canula was inserted and this second one had not been removed up to the time the patient was brought to me. On removing it I found it so corroded that I deemed it imprudent to replace it, and therefore substituted another.

Laryngoscopic inspection revealed multiple neoplasms filling the upper portion of the larynx and extending along the laryngeal face of the epiglottis almost to its very tip. There were likewise a few multiple neoplasms at the base of the tongue, and along the pharyngo-epiglottic and glosso-pharyngeal folds.

The patient was admitted to the hospital, where my clinical aids, with some assistance from me, removed in a number of sittings all the morbid growths, chiefly with forceps; about a month being consumed in the procedures, and the voice returning in a satisfactory manner both for conversation and for singing.

After waiting for a few weeks, without noting any evidence of recurrence or repullulation, I removed the canula definitely at the end of June, and sent the patient home with directions to report in October, when my clinical services at the hospital would be resumed.

When she returned there was still no evidence of recurrence. The fistule in the neck, however, was as large as ever, and I determined to close it with a cutaneous flap. So on October 7th, before my clinical class, I dissected out the cicatricial tissue around the fistula, so as to leave an oval section in the integument, with bevelled edges from without inward. A flap of integument was then raised from over the sternum, and so bevelled on the edges that when the flap was turned up, skin-surface inward, its edges would fit into the bevelled seat prepared for it around the fistula, somewhat like a stone is set in a piece of jewelry. The parts were carefully stitched as far around to the pedicle of the flap as possible. The fat of the flap was then snipped away with scissors, and the raw flap was dressed with sulphuric ether so as to dissolve any remaining fat during the healing process. The wound in the tissue from which the flap had been raised, and which had gaped widely by retraction during the fitting of the flap in its new and reversed position, was drawn together with sutures, except a triangular portion superiorly and just beneath the pedicle of the inversion, and which had to be left to heal by granulation.

The flap adhered well and thoroughly to the parts to which it had been stitched, and there was no necessity to release the pedicle to fill in the gap in the healthy tissues. Nature's unaided efforts were sufficient to cause absorption of the exuberant duplicature at the pedicle, and to gradually skin the raw surface of the flap with cicatricial tissue, so that there was no further occasion for professional supervision at the end of a month, when the patient was dismissed with instructions to report at the end of a year, or sooner, should anything untoward occur.

On October 17, 1893, the patient reported at the clinic very much improved in appearance, and with a clear voice of greatly increased volume. She had gained ten pounds in weight. The cicatricial tissue over and around the position of the fistula was in excellent condition, and except for a glossy aspect was not notably distinguishable from normal integument.

On examining the larynx, I detected a small, red, pedunculated pyramidal growth, about the size of a small pea, at the anterior commissure of the glottis and hanging below the vocal bands so that it did not interfere sufficiently with phonation to produce hoarseness. The voice, indeed, was shrill rather than deep. Whether this was a recurrent growth, or a repullulation from fragments left in extracting the growths the year previously, cannot be determined. It might be of either, but was probably of the latter character. It had occasioned no symptoms whatever indicative of laryngeal disorder. This little growth was readily removed with forceps.

MEDICAL PROGRESS.

Exophthalmic Goiter Fatal after Extirpation of the Uterus during Pregnancy for Fibromata.—BROOMALL (*New York Journal of Gynecology and Obstetrics*, vol. iii, No. 11, p. 978) has reported the case of a woman, thirty years old, pregnant for the second time, who presented protrusion of the eyeballs, tachycardia and bronchocele, with insomnia, headache, and dyspnea. Some of the bones, but not the pelvis, displayed evidences of rhachitis. Examination disclosed the presence of many small nodules in the walls of the uterus, and of one large fibroma near the fundus, while the pelvic cavity was occupied by a round, firm body, having its attachment to the cervix, and preventing the recognition of any portion of the fetus *per vaginam*. The pregnancy had advanced to the seventh month. The patient suffered a good deal from attacks of vomiting, accompanied by dyspnea and irregularity and rapidity of action of the heart. In the course of a month her condition had become alarming, all of the symptoms being aggravated, and the general suffering increased by painful uterine contractions. During the development of the lower uterine segment the resistance of the cervical fibroma excited the uterus to painful spasmodic action, with the result of forcing the tumor lower down in the pelvic cavity, and causing complete obstruction to the descent of the fetal head. As the condition of the patient demanded immediate relief, and as delivery through the natural passages was considered out of the question, extirpation of the uterus was decided upon and carried out. The child was asphyxiated, and died after half an hour. During the extraction of the fetus, uterine hemorrhage was prevented by manual compression of the cervix; after delivery, an elastic ligature was substituted for the fingers of an assistant. Later, in the adjustment of the serre-neud, it was found that the cervical fibroma could not be drawn above the constricting cord, and that the pedicle was too thick. As the patient would have been exposed to the danger of infection if the tumor were allowed to remain partially constricted by the serre-neud, or to the danger of hemorrhage if the temporary tourniquet were relaxed sufficiently to permit of the enucleation of the growth, the peritoneal covering was slit below the elastic cord, the cut edges of the peritoneum caught, and the tumor enucleated without much difficulty. The surrounding peritoneum and connective tissue were then drawn above the serre-neud and made part of the stump, which was slender and long enough to be brought out at the lower angle of the abdominal wound. Though the loss of blood was not excessive, and the symptoms of shock not greater than usual after similar operations, the action of the heart was feeble and rapid. The woman did fairly well until the nineteenth day after the operation, when she suddenly became very restless and complained of severe pain in the epigastrium. The pulse was rapid and feeble, and death occurred on the following day. Upon post-mortem examination the abdominal wound was found firmly united, with slight suppuration around the stump, and a few drops of pus in an abdominal stitch-sinus. There was no peritonitis, and only slight adhesion between the omentum and the stump. The kidneys and liver were normal. The heart was large; its walls thinned; the endocardium injected; but there was no valvular defect and no heart-clot. Death is ascribed to the primary disease, exophthalmic goiter.

Hemorrhagic Pachymeningitis, with Focal Epilepsy.—EUSTACE and PARSONS (*Dublin Journal of Medical Science*, November, 1893, p. 369) have reported the case of a man, twenty-eight years old, who for a year had suffered from attacks of petit mal and manifested some symptoms of paretic dementia. His father suffered from paralysis agitans, a sister was hysteric, and an uncle had died of syphilitic general paralysis of the insane. It was certain that the patient was not addicted to alcohol or sexual excess; nor had he contracted syphilis. There was a vague history of a blow upon the head during childhood, but medical attendance was not required, and no scar could be found. On one occasion the patient had attempted to injure his sister with a pruning-knife. The man appeared intensely happy, was garrulous and seemed pleased with his surroundings, and did not appear to find the restraint of asylum-life irksome. He was vain and boastful, but apparently in good physical health. While under observation he had a convulsion in which he turned pale and suddenly fell to the floor, the left arm and leg being more actively moved than the members on the right side. The left side, and particularly the arm and the leg, was bloodless, cold, and paralyzed. The probability of the existence of a tumor affecting the right hemisphere of the brain was discussed, but the signs were not deemed sufficient to warrant operative interference. The convulsive attacks were repeated during the subsequent two years, despite the administration of bromids and other treatment. The patient believed that he could ward off an attack by the use of antipyrin, or by tying a string around his left wrist. He also believed that sitting near a fire or in a very warm room induced an attack. The attack proper was preceded by a premonitory stage, lasting four or five minutes, though sometimes this occurred without being followed by an attack. The left thumb, as a rule, commenced to twitch first. The convulsive stage varied greatly in intensity and duration, lasting from two to fifteen, or even thirty minutes. The pulse during this stage was small and hard, but as soon as the man passed into the comatose stage the pulse became full, rapid, and bounding, increasing from 60 or 70 to 100 or 110, and the frontal arteries stood out like thick cords. In the attack there was conjugate deviation of the eyes to the left. The post-paroxysmal stage lasted from a half-hour to two hours, or even longer. The man's condition fluctuated from time to time, but at the end of two years the

right side of the body became paralyzed following a convulsive seizure, aphasia developing after some subsequent seizures. From now on the condition of the patient became progressively worse. The dementia became more profound; control of the sphincters was lost; the pupils were closely contracted; the reflexes were exaggerated. Finally, bedsores developed, and an attack of pneumonia led to a fatal issue. Upon post-mortem examination an extensive hemorrhagic membrane about three-sixteenths of an inch thick was found covering the whole of the left cerebral hemisphere, with the exception of the base, while the right hemisphere was covered by a similar membrane, though of greater thickness in places, the posterior portion of the frontal and parietal lobes being flattened and softened by the pressure of the membrane.

Changes in the Spinal Cord in the Course of Pernicious Anemia.—In fatal cases of pernicious anemia which during life presented no disorder of the nervous system, MINNICH (*Zeitschr. f. klin. Med.*, B. xxii, H. 1, 2, *Centralb. f. klin. Med.*, 1893, No. 43, p. 914) has found after death changes of two varieties. The one consisted in capillary hemorrhages in the spinal cord, with their sequelæ, miliary scleroses. These hemorrhages are analogous to the retinal hemorrhages that take place under like conditions. The second group of cases were characterized by peculiar areas of softening. Similar changes were also found in cases in which death had resulted from nephritis, icterus gravis, and leukemia. These areas microscopically presented profound changes, which could be traced from the simple swelling of the nerve-fibers to accumulations of disintegrated tissue. It is pointed out that if this variety of softening exist in association with true primary spinal degeneration, it may obscure both the clinical and the pathologic picture. It is further believed to be not impossible that the occurrence of this (hydropic) degeneration, in the course of severe diseases, may furnish the basis, subsequently, for true degenerative processes in the spinal cord. Control-observations showed that the alterations found were not the result of artefacts, or due to post-mortem change.

Curetting of the Trachea for the Relief of Diphtheric Obstruction.—SCUDDER (*Boston Medical and Surgical Journal*, 1893, No. 19, vol. cxxix, p. 465) has reported the case of a boy, four years old, in which tracheotomy was performed early on account of increased difficulty in breathing. All went well until the second day after the operation, when the secretion from the tube became a little sticky and slightly diminished in amount. On the third day there was serious trouble. The secretion became still less, the respiration rapid and labored, and the child cyanosed and exhausted. All of the ordinary measures failing, a dull-wire curet that happened to be at hand was introduced into the wound and gently carried to the bifurcation of the trachea, and all sides of the passage were systematically and thoroughly curetted. In the progress of the operation pieces of membrane, one of which made a complete cast of the circumference of the trachea, were withdrawn through the wound. The hemorrhage was slight. The relief to the dyspnea was immediate. The tube was replaced and the child made an uninterrupted recovery. One or two additional pieces of membrane came away on the following day. The child was well and strong two years later.

THERAPEUTIC NOTES.

Spinal Drainage in Acute Meningitis.—PAGET (*Lancet*, No. 3658, p. 873) has reported a case of acute meningitis in a boy eight years old, attended with vomiting, drowsiness, restlessness, abolition of knee-jerks, retraction of the head, occasional strabismus, dilatation and immobility of the pupils, swelling and blurring of the optic discs, incontinence of the sphincters, and marked wasting, in which the dura mater was freely opened between the fourth and fifth cervical vertebræ, a horsehair drain introduced, and the wound closed around it. The operation gave relief for one day, but death ensued four days after the operation. Upon post-mortem examination accumulations of fluid were found in the middle and posterior cerebral fossæ, and the convolutions were greatly flattened. The third and fourth ventricles contained an excess of fluid. The pia mater at the base of the brain was infiltrated with sero-purulent lymph and showed a few minute tubercles. The opinion is expressed that the general swelling of the brain that existed was the chief cause of death, and the suggestion is made that it might be advisable in a similar case to make a free opening into the vault of the skull after incising the dura of the cervical spine.

Subcutaneous Infusion in Eclampsia Gravidarum.—PORAK (*Lancet*, No. 3658, p. 901) reports the successful treatment of a number of cases of puerperal eclampsia by means of subcutaneous injections of a saline solution. A quart of sterilized water, to which from a dram and a half to two drams of sodium chlorid have been added, and at the temperature of the body, is slowly injected into the buttock by means of a hand apparatus or a fountain syringe, and absorption is facilitated and favored by gentle massage. Of eight cases thus treated recovery took place in six. In one of the cases that terminated fatally the patient was moribund when she came under observation, and the other died at home, whither she had been taken contrary to medical advice.

For Gastric Ulcer.—

(HEPP.)

℞.—Chloroformi . . . . . 1.
Bismuthi subnit. . . . . 3.
Aquæ destil. . . . . 150.—M.
S.—To be taken every hour or two hours.

(BOAZ.)

℞.—Argenti nitrat. 0.03
Aquæ destil. . . . . 120.—M.
S.—A tablespoonful three times a day on an empty stomach.

Corr.-bl. f. Schw. Aerzte, No. 20.

For Fermentative Dyspepsia.—

℞.—Ol. creosoti puri. . . . ♏xij.
Spt. tenuoris . . . . fʒijss.
Ammonii benzoat. . . . ʒij.
Glycerin. puri. . . . fʒvj.
Infus. caryophylli . . ad fʒvj.—M.
S.—A tablespoonful two or three times a day between meals in water.

The Asclepiad, 2d quarter, 1893.

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SATURDAY, DECEMBER 9, 1893.

"CRANKS."

THE recent assassination of the Mayor of Chicago has renewed public interest in the features of homicidal mania and has led to considerable miscellaneous suggestion on the part of laymen, especially through the press, as to the methods of dealing with such dangers. In all this discussion one may distinguish much evidence of feeling and desire for the administration of commensurate punishment, with but little logical consideration of the subject or even knowledge of the conditions that lead to the acts. The non-medical portions of the community, unfortunately very largely the lawyers and newspaper people, do not appreciate the nature of delusional diseases, do not realize the frequency of instances in which men lose all sense of responsibility, and under which they are regardless of possible harm to themselves. Swift and even cruel methods of punishment may have their value. The court of Judge Lynch may not be without a certain usefulness in a wild section, just as the summary proceedings of a court-martial are universally regarded as befitting an actual state of war, but the majority of people do not understand that measures which appeal to the fears of evil-doers cannot be felt by those who are driven by an overpowering delusion. The murder of GARFIELD aroused the nation to the highest pitch of resentment. At the time of the trial the theory of GUITEAU'S insanity was rejected by most persons, yet at the present time it is generally accepted. The line that separates such deluded persons from the criminals proper is a distinct one and has long been recognized by alienists. The community, however, pays almost no notice to homicidal maniacs until some shining mark is struck down, when a wave of discussion passes across the land, soon subsiding into indifference.

These problems cannot be rationally discussed except from medical standpoints. Until our jurisprudence awakens to the consciousness that these acts are the result of disease, bringing the victim into the domain of irresponsibility, no adequate measures will be secured. Learned judges are not infrequently the most serious obstacles to a scientific consideration of these questions. Precedent goes for much in law, and principles laid down by chief justices generations ago are cited in opposition to the scientific demonstrations of physiology and pathology. In a case tried some years ago in this city a defence of insanity was justly set up, and the trial judge, one of the most learned and just of judges, said, in comment on the statement of an expert, "Well, that is the kind of insanity we hang for in Pennsylvania." This reply evinces the difficulty in utilizing the scientific knowledge now at hand.

It is, however, not merely with the more flagrant cases of delusional mania that a reform is needed. Authorities are too indifferent toward milder forms which may lead to many petty annoyances, crimes of less note, or ultimately to murder. It is not unnatural that, in a community in which freedom is the watchword, every guard should be thrown around the citizen to secure to him his liberty, but an extreme sensitiveness in this respect leads to danger. So great has been the popular feeling on the question of the possibility of confining sane persons in asylums that the machinery of the law is easily invoked to secure the discharge of the moderately insane. Juries frequently adjudge a man sane concerning whom competent expert testimony has demonstrated insanity. Moreover, in such cases the experts are likely to be criticised severely, even abusively, by the newspapers, and hence hesitate to speak as freely and as often as they might. The murderers of GARFIELD and HARRISON belong to a class of persons very numerous, but exhibiting many grades of disease, from violent delusions tending to homicidal acts to mere feelings of distrust of those with whom

they are most nearly associated. Not until all these cases come to be regarded as objects for diagnosis and treatment in the hands of the medical profession as absolutely as any other disease, will they be properly assigned. How absurd would it be to submit to an ordinary jury the determination of the question as to the existence or non-existence of diphtheria, carcinoma, or brain-tumor. In earlier days when mankind believed in demoniac possession, when the nature of insanity was not known, and when great danger existed of the unlawful confinement of persons, we can appreciate the value of the writ of *habeas corpus* and the right to a traverse before a jury, but our knowledge of mental disease is now enriched by scientific methods, and no such dangers can ensue.

The whole question is, therefore, not one for lawyers but for doctors, and it is hoped that in default of uniform methods by the States themselves some means may be found to secure national legislation that may eliminate from our courts methods of procedure that grew out of ignorance. It is also desirable that the community at large shall awaken to the necessity of providing means and methods of restraint for delusional maniacs of all grades and, among other efforts, aim to prevent the propagation of such defective strains.

THE TRANSMISSION OF ENTERIC FEVER BY WATER.

THERE can be no question that the most frequent mode of transmission of enteric fever is through the intermediation of the water-supply. Next in frequency is the milk-supply, but this may ordinarily be included in the first, because there is nothing peculiar to milk itself or its source that should make it a carrier of infection, apart from procedures concerned in its manipulation and distribution. This contamination of milk need not necessarily be a result of premeditated adulteration or dilution, but may take place from the legitimate use of water for purposes of ordinary cleanliness. Besides, the possibility of direct contamination of milk through an infected person must also not be ignored. Other possible channels of communication are infected ice, infected vegetables, and defective sewerage or plumbing.

SEDGWICK and CHAPIN[1] detail an analysis of an epidemic of enteric fever in the city of Springfield, Massachusetts, and SEDGWICK[1] reports the results of an investigation of an epidemic of enteric fever in Somerville, Massachusetts, both of which upon careful inquiry were found to be due to infected milk. In the first instance the cases occurred in one of the best parts of the city from a sanitary point of view, but among families supplied with milk from a common source. Some little difficulty was at first experienced in tracing the ultimate channel of infection, but upon persistent and diligent investigation it was found that some cases of enteric fever had occurred at the dairy whence the suspected milk was derived. It was learned that for purposes of preservation the not quite full cans containing the milk were for a time submerged in a well that there was ample reason to believe had become contaminated by the dejecta from the cases of enteric fever, and it was further found that these cans were not so hermetically closed as to prevent the entrance of water. The number of cases discovered and investigated in this epidemic was 150, and the number of deaths 25. Of the whole number 101 had directly received milk from the incriminated source, while 34 others had access to the same milk.

In the second instance reported it was at once discerned that the cases also occurred particularly among the customers of one milkman. Further investigation disclosed that a son of this man who participated in the handling of the milk-cans, if not of the milk itself, had an attack of enteric fever, at first unrecognized, and throughout a large part of which he had continued at work; and it is reasonably surmised that he in some more or less obvious manner was the medium of infection. Thirty-two cases were traceable to this common cause. Of this number thirty had been supplied with or had access to milk supplied from the suspected source.

These two reports, the essence of which we have here reproduced, illustrate admirably how difficult it sometimes is to trace a source of infection, and they reflect great credit upon those who undertook and carried the investigation to a successful issue.

Many similar reports have been published, and the data are abundant showing the intimate relation between the spread of enteric fever and contamination of the water-supply and of the milk-supply, and we shall only further briefly refer to the report by DABNEY (THE NEWS, December 2, 1893, p. 630) of an epidemic of enteric fever involving fourteen

[1] Boston Medical and Surgical Journal, vol. cxxix, No. 20, p. 485.

[1] Ibid., p. 489.

students in the University of Virginia. These lived in different parts of the institution, but all took their meals at the same hotel, one of the employés of which was found also to be ill with enteric fever. There was nothing about the hotel itself to account for the sickness, but it was learned that a part of the milk-supply was derived from the dairy of the keeper of the hotel, and further investigation disclosed the fact that the udders of the cows from which the milk was obtained were washed with water obtained from a creek into which a sewer emptied at a point above the dairy and, in addition, into which probably the dejecta of a previous case of enteric fever, thrown on the ground and not disinfected, had been washed.

There seem to be but a few words to add, but the importance of these cannot be exaggerated. They are that *if all water and all milk used for personal and domestic purposes were sterilized enteric fever would soon disappear.* An approximation to this desirable end is attainable in a rigid scrutiny of the water-supply and legislative supervision of the milk-supply. The benefits of such protective measures would apply not only to enteric fever but also to scarlatina, to diphtheria, to cholera, perhaps to malaria, and probably to other infectious diseases.

ELECTRIC TRACTION AS A SANITARY MEASURE.

If it be true that misfortunes come unexpected and unbidden, "like a thief in the night," it is also true that blessings may come similarly. We do not always realize the full value of inventions until long after they are in practical operation. It seems that certain recent advances in the mechanical world are already giving evidence of benefits far more extended than was contemplated or expected at their introduction.

Electric traction is no longer an experiment, and we can foresee that it is destined to modify very largely social and commercial relations, especially of rural life. It affords a method of reducing the isolation and fixedness which is so unpleasant a feature of the farm, and which has operated so unfavorably on the mental development of its inhabitants, even according to some statisticians materially increasing the amount of insanity.

At the present time one of the large American cities is undergoing a transformation of its methods of surface transit probably more extensive than has ever occurred in a similar area, and already there is enough accomplished to show that the new conditions will result in unexpected and uncontemplated advantages. The nature of the electric motor is such that the cars operated by it are heavier than the common horse-car; this has necessitated a complete reconstruction of the tramways by the laying of a heavier and firmer rail with neater joints. This will result in firmer movement, even if swifter, and will be less fatiguing on the regular rider. Those who are obliged to ride frequently on common tramways find this fatigue no small inconvenience.

The municipal government has, however, in granting the "trolley" privileges, secured a repaving of the streets, and here has been a material gain to city sanitation. Notably, is the employment of the asphalt surface an advantage. It is, however, to be kept in mind that unless this improvement in the construction of the roadway is supplemented by greater attention to cleaning, the change may be a source of more harm than good. Asphalt and well-laid granite block pavements are practically non-absorbent. Hence, all refuse, especially the manurial refuse, which is so abundant on business streets, must be systematically and promptly removed, or it will become dry and be carried everywhere. Our advancing knowledge of the causation of disease shows us that some of the animals that mankind has for ages subjected to his government are his greatest enemies. There is a well-founded suspicion that the cow is the main distributer of one of the most widely fatal of diseases, and incidentally of other forms, and it is not unlikely that the droppings of horses so liberally supplied on our city streets are sources of contagion and infection as yet unrecognized. Now, the country road built "on Adam's plan, and not MacAdam's," is an absorbent surface; the soil acts as a disinfectant for all decomposing organic matter. To secure, therefore, the benefits of our non-absorbent pavements, they must be cleaned thoroughly and repeatedly, not by sweeping, but by flushing into the sewers every night, or at least by such methods as will insure the complete removal of all dirt without allowing it to be raised in clouds to be inhaled by those passing or to settle on every level surface.

Incidentally, however, the coming of electric traction will relieve us of some of these dangers, for it will materially diminish the number of horses working on the streets, and gives us hope that the day is not far distant when lifeless motors will

do all the work in our cities, whether for business and pleasure, and the horse, with his essentially unclean habits, will be relegated to the open country.

Further are to be noted benefits to the health of the citizen by the advance in his comfort that will result from a swifter, smoother, and more commodious method of transit, better lighted cars, and the abolition of the enormous stables, reeking with the offensive odors of horse-manure, and infested with all manner of vermin. The improved condition of the streets will go far also to prevent the filthy condition of the car floors; and if, in addition, a forcible public sentiment can once operate against the spitters, surface travel will be an approach to enjoyment.

LEAVE THE CODE AS IT IS!

THE MEDICAL NEWS finds it necessary to say a few more words on the Code question in order to make its position clear. We still believe the course outlined by us in various editorials, and especially in the issues of September 17, 1892, and January 28, 1893, to be the best possible permanent solution of the Code question.

Realizing, however, that under existing circumstances this course cannot be successfully entered upon, we now announce ourselves as definitively against revision. We prefer the Code as it is to any amendment suggested publicly or privately, officially or unofficially, that seems to have any prospect of passing.

Except in one particular, the Code does not interfere with the comfort, prosperity, or freedom of any *honest and honorable* physician—for no such physician desires to do anything the Code inhibits. In the one particular referred to—namely consultations with sectarians and quacks—the few honest physicians who find the Code opposed to their sincere judgment, must yield to the will—the just and proper will—of the majority. For reasons unnecessary to repeat, that prohibition must be maintained. There is no discussion of the Code that has not been aroused by its opponents, and if these will cease their unwise agitation there will be nothing to interfere with scientific business at the meeting of the American Medical Association. Let our united efforts, then, be made on behalf of the honor and dignity of the profession as represented in "the Code as it is."

EDITORIAL COMMENTS.

A Few Little Incidents of Foot-ball.—The *Lancet* has long made it a custom to chronicle the inconsiderable mishaps that occur from time to time on the foot-ball field, and Dr. Amidon, of New York, has taken the pains to make a list from the *Lancet's* reports of those that came to the notice of the editor in the year 1892. How many casualties escaped notice cannot be told. In this year twenty-three deaths occurred in England that were directly traceable to foot-ball. Those indirect ones that occurred subsequently, or that will occur, are left for future historians. Here is Dr. Amidon's little list of the English accidents requiring hospital treatment:

Nature of Injury.	No. of Cases.
Concussion of brain	3
Injury to the head	1
Injury to the nose	1
Fracture of the nose	1
Fracture of the jaw	1
Fracture of the collar-bone	20
Dislocation of arm	1
Compound fracture of arm	3
Fracture of arm	5
Bad fracture of left arm	2
Serious injury to arm	1
Compound fracture of the elbow	1
Fracture of left wrist	1
Fracture of ribs	3
Severe sprain of thigh muscles	1
Fracture of thigh	3
Injury to leg	1
Fracture of leg	29
Bad fracture of leg	1
Compound fracture of leg	5
Fracture of knee-cap	1
Severe injury to knee-cap	2
Fracture of ankle	3
Dislocation of ankle	1
Sprained ankle, muscles, and tendons severely wrenched	1
Severe injury to foot	1
Fracture of spine	1
Serious injury to spine	1
Serious injury in groin	1
Severe internal injuries	2
Severe internal injuries, fatal in two days	1
Fatal abdominal injuries	6
Undescribed accidents followed by death	3
Undescribed accident followed by lock-jaw and death	1
Total number of grave injuries	109

For the year 1893 the returns are not yet in. In the *Lancet* of November 18th, there are recorded, as occurring during the preceding week, three cases of fractured leg; one of kick in abdomen, with death; one of concussion of spine; one of fractured clavicle; one of injury and death. This year, therefore, there have been at least twenty-eight deaths in England.

English and American Foot-ball.—Since our last issue at least two more deaths have occurred in this country from foot-ball, bringing the known total for this season up to seven.

It has been said by the enthusiasts that the English game and the American game are as different as croquet and prize-fighting, the inference being that croquet-like foot-ball is the American style of the game. In this way it is hoped the shock of responsibility will be lessened and the fact explained of the relatively lower mortality of the American game. But a moment's dispassionate reflection shows the argument to be a vexatious boome-

rang. There can be no doubt that for every ten games played in the United States there are a hundred played in England. This is a very conservative estimate. It does not need much statistical training to deduce from this fact the obvious result that if the brutal game in England kills only twenty-eight persons, while the croquet-like American game kills seven, then when ten times as many shall play the game here, our croquet-like death-rate will be at least seventy. Moreover, if, as has been averred, the brutal English game is at least ten times as brutal as our game, then, —— but we forbear!

There seems to be some justification for the saying that the difference in method between the two styles of game is that in England the rule is, "If you can't kick the ball, kick the man;" with us it is, "If you can't kick the man, kick the ball."

Of course every one knows that the cause of the greater English mortality is chiefly due to the fact that in England a larger proportion of non-college men play, miners, clerks, the unsound, untrained, everybody. The game itself is essentially the same. The greater risk, injury, and death-rate come to the untrained player. It is often remarked that the deaths do not occur here in our larger college professional teams, and precisely for the same reason. This gives occasion for the saddest thing about this whole controversy, the cold-blooded indifferentism of the foot-ball enthusiast to the injury done the inexpert, unprofessional, plebeian imitators of his example. The wrong done the community is nothing to him. But some of the college authorities still make at least pretense of Christian belief and practice. To them we would commend for rumination a principle enunciated in I. Corinthians, viii, 13.

The Infectiousness of So-called Membranous Croup.—We have on a previous occasion (see THE NEWS, July 23, 1892, p. 100) referred to the intimate relationship, if not actual identity, of so-called membranous croup and diphtheria. Confirmation of the position then taken by us comes in the form of a public announcement by the Health Department of the city of New York. The Chief Inspector of the Division of Pathology, Bacteriology, and Disinfection of the Department, Dr. H. M. Biggs, reports that of thirty-six cases of so-called membranous croup in which a bacteriologic study was made, the bacillus diphtheriæ of Loeffler was found in thirty. In all of the cases "the membrane was either confined entirely to the larynx, or at most only slight deposits existed in the throat, while there was very extensive exudation in the larynx." In six cases no diphtheric bacilli were found. These must, therefore, be considered as instances of catarrhal pseudo-diphtheric inflammation of the larynx, analogous to similar non-diphtheric pseudo-membranous inflammations of the pharynx. Five of the cases in which the bacillus of Loeffler was found were both preceded and followed within a week by other cases of pharyngeal diphtheria in the immediate vicinity; three cases were preceded by cases of true diphtheria; and seven cases were followed by other cases of diphtheria. The remaining fifteen cases were neither preceded nor followed by cases of diphtheria in the immediate vicinity. In accordance with the results of the investigation as here summarized, the Commissioner and Chairman of the Sanitary Committee of the Board of Health of New York City, Dr. Cyrus Edson, requests physicians "to report cases of membranous croup under that name, in the same manner that they report cases of contagious disease. The data already obtained are sufficiently convincing to cause this request to the profession to treat membranous croup as a contagious disease; that is, to advise isolation and disinfection, the same as in a case of diphtheria."

Chronic Nephritis without Albuminuria.—That the mere presence or absence of albumin, and the detection of or failure to detect the presence of tube-casts in urine, are not safe guides in the diagnosis and prognosis of chronic disease of the kidney, degenerative or inflammatory, would seem demonstrated by the results of a careful study detailed by STEWART (*American Journal of the Medical Sciences*, December, 1893, p. 654), who records a group of illustrative cases in which the presence of albumin could not, as a rule, be demonstrated, while tube-casts were only occasionally found. The symptoms to be looked for in cases of this kind are rather heightened arterial tension, with accentuation of the second sound of the heart, and a tendency to cardiac enlargement, diminished secretion of urine, and deficient elimination of nitrogen, headache, vertigo, breathlessness, impaired vision, and retinal changes.

In any case in which insidious changes in the kidneys are suspected and the presence of albumin and tube-casts is not demonstrable by ordinary methods, repeated examinations of the total twenty-four hours' urine should be made. The search for casts may be facilitated by centrifugation. Attention should also be directed to the quantity of urine excreted and the amounts of solids contained, particularly of urea and uric acid. The value of these observations resides in the fact that early recognition of the condition is essential to the attainment of the best therapeutic results.

The Ethics of Foot-ball.—Among the multitude of congratulatory letters received by THE NEWS as to its criticisms of foot-ball there have been a few from men whom we and the world delight to honor, urging that while the physical effect is as pernicious as we have contended, the moral and educational influences of the game are far worse than the physiologic effects, and that to these aspects the most attention should be directed. In reply we can only suggest that as a medical journal our province in this connection is chiefly surgical and hygienic, and that only so far as the moral and educational effects are bound up with, and exercise influence upon, the health of the community and the good of medical education, so far must the physician's criticism and domain extend. Those great guardians of the morals of the community, the lay-newspapers, have their chosen field undisputed. To them may be left the questions of the encouragement of betting, drinking, and general rowdyishness by the public professional games, and their evil influence on social progress and morals. The universities also should have a chance for a word. To them may be left the consideration of the lessons to be derived from whole pages of remarkable reports of the various "Thanksgiving" (*sic*) games as published in the great New York papers of December 1st. It is a most lamentable dis-

grace, this of our educational institutions, for advertising purposes going into the business of public amusement-furnishing, and encouraging public contests that the "sporting editors" of daily papers say are more dangerous and debasing than "glove-contests." It is enough for us that at every game there must be ambulances and a corps of surgeons, nurses, rubbers, etc., in waiting, to emphasize the medical and surgical aspects.

The Relation between the Testicles and the Prostate.—Apropos of the proposal to remove the testicles for the relief of prostatic hypertrophy, REGINALD HARRISON, in a communication to the *British Medical Journal* of September 23, 1893, relates the case of an elderly man with symptoms of increasing urinary obstruction, who, a number of years ago, importuned him to perform castration to prevent further growth of the prostate gland. The proposition was declined, but, by way of compromise, subcutaneous division of the vasa deferentia immediately below the external abdominal ring, where they are to be easily and safely reached, by means of a tenotome, was practised, first upon one side and then upon the other, at an interval of a few days. The further progress of the case is not known, other than that the patient was living and well six or seven years after the operation. If atrophy of the testicles will be followed by atrophy of the prostate, and if division of the vasa deferentia will lead to atrophy of the testicles, there are numerous and obvious reasons why the simple operation should be preferred to actual castration.

In the same connection POWELL (*British Medical Journal*, November 18, 1893, p. 1099) reports the case of a man, sixty-five years old, under treatment for prostatic enlargement, whose right testicle was removed on account of the presence of a neoplastic nodule. The left testicle was small and probably useless. The urinary symptoms soon disappeared, and examination some time later showed that the prostate was much reduced in size.

An Analysis of 1300 Errors of Refraction.—One of the most valuable things in medicine is a philosophic and detailed analysis of a large clinical experience in a specialized line of work. Such a bit of good work comes to us from Dr. W. F. Southard, of San Francisco, entitled *The Modern Eye*. With painstaking care, Dr. Southard has collated the statistics of his refraction-work and deduced therefrom many valuable lessons, mention of which we regret that want of space compels us to forego. The monograph (reprinted from the *Pacific Medical Journal*) is admirably outfitted with tables and charts that will be useful to all ophthalmic surgeons. One of the lessons, old it is true, but most sadly neglected, is the intimate association of low refractive errors with intense reflex disorders. "It would seem that no further argument is needed to show the necessity of correcting every such error."

SELECTION.

SOPHISTICATION OF "ANIMAL EXTRACTS."

To the Editor: In your issue of August 26th you published a communication of mine on Hammond's cerebrin, in which the presence of nitroglycerin was suspected.

The results of my chemical examination of that article, also of a bottle of Hammond's medullin, showed how well founded was that suspicion.

A few weeks later Dr. Hammond made public a reply, the essential part of which is that I could not have analyzed the genuine article, since I failed to find alcohol and boric acid in it.

Such a way to meet the issue was so weak, under the light of my statement of the true object of my investigation, that I was contented to let the matter rest without any further remarks.

Since then I have seen a circular issued by the Columbia Chemical Co., the manufacturers of Dr. Hammond's animal extracts, which says that I failed to find water, alcohol, boric acid, and animal matter in the samples examined by me.

Therefore the trade is warned that unscrupulous dealers get empty bottles of Dr. Hammond's products, and fill them with some dangerous imitation, and palm them off as the real article, out of pure deviltry evidently.

Let us bring back the question on its true ground. I never pretended to publish a complete analysis of Dr. Hammond's cerebrin and medullin, because that was unnecessary.

The only question for me to solve was whether the physiological effects of the two articles are due to some extraneous matter, namely, nitroglycerin, or to some ptomaïn.

A priori, there was a faint possibility that a six months' maceration of brain-matter might be attended with the production of *neurin*, or neurin and *cholin*, possibly *muscarin* also.

Those three alkaloids have decided and powerful physiologic properties, not entirely unlike those of nitroglycerin. The general tests for alkaloids failed to show their presence.

On the other hand, I obtained decided reaction, characteristic of nitroglycerin, or, I added, some other closely allied substance (some nitrite for instance).

Since the publication of my first note, I examined with exactly the same results, another *unbroken package* of cerebrin.

The original bills seen by me, show that the three samples were sold by the Columbia Chemical Co. (New York), to Messrs. Lehn & Fink (New York), who forwarded it to Messrs. Gale & Blocki (Chicago), from whom I received it unopened.

With high regard, M. DELAFONTAINE.

—*The Journal of the American Medical Association.*

Dr. Henry Leffmann, Professor of Chemistry and Toxicology in the Woman's Medical College, Philadelphia, chemist to the State Board of Health of Pennsylvania, Eastern District, a man whose character and scientific reputation are beyond all question, recently examined a sample of cerebrin obtained from the Columbia Chemical Co., of New York, by a well-known drug house, and delivered at his laboratory in the original package, bearing across the label of the three-cornered bottle the *fac-simile* of Dr. Hammond's signature. The quantity of material in a single sample is quite small, but Dr. Leffmann was able to get reactions for boric acid, glycerol, nitrates, and nitrites. He has, therefore, reached the same conclusions as Prof. Delafontaine.

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ORIGINAL ARTICLES.

THE TREATMENT OF EXOPHTHALMIC GOITER.[1]

BY J. MADISON TAYLOR, M.D.,
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FIVE years ago I wrote a brief paper on the early recognition of exophthalmic goiter and reported a number of cases.[2] Since then other cases have come under my observation, both in my own practice and in that of friends. These I have carefully considered, especially from the standpoint of curability. Most of my original cases are now well, and I shall, in brief, report their present condition and the means that were used to bring about this good result. Others will be referred to as illustrating interesting features.

In looking over the literature of exophthalmic goiter, I notice that there is a growing conviction, which I myself have always felt, that this disorder is a very manageable one. Undoubtedly some cases are not to be made well; certainly a large proportion can be most satisfactorily helped, and many entirely cured. The general measures that I have employed with advantage have chiefly the element of rationality to recommend them. It has been said, and rightly, that those disorders which have recommended for their treatment the largest array of medicines and measures are the ones of which we know least. Certainly a large and contrary lot of remedies are urged for this disorder; some are claimed by their authors to be almost specific; others are backed up by a large array of cases; and yet few, to my mind, are, singly considered, much better than the rest.

In looking over my paper referred to, certain conclusions then formulated seem still to obtain with equal force. The most important measure is the early recognition of the symptoms that in their entirety represent the malady. I am inclined to doubt more strongly than ever that, with early recognition and judicious treatment, the disorder need at any time become so serious in its results as we have been led to believe.

Without discussing the reasons at length, my convictions are that exophthalmic goiter is a vasomotor disturbance, and not related to any specific disease of the thyroid gland. It has not been shown to have any connection with the functions of the thyroid as a trophic organ, or at any rate to depend upon either an increase or a diminution of the normal secretions of that gland.[1] It has happened that all of the symptoms of Graves' disease have come on with great suddenness, in consequence of profound emotion, and in persons with, presumably, normal thyroids, and have again disappeared as abruptly. Unless further evidence shall be adduced to the contrary, I am inclined to regard the disorder as a cardio-vascular erethism,[2] or, to use the term coined by my friend Dr. S. Solis-Cohen, as a "vasomotor ataxia."[3]

In this connection certain tropho-neuroses are of the deepest importance therapeutically. The group of trophic and vascular disturbances associated with enlargement of the thyroid gland, including exophthalmic goiter, myxedema, cretinism, and akromegalia, are receiving a good deal of attention, both as to their pathology and as to their treatment, and from this search-light tendency of medical science much is to be hoped. I would be glad to believe that specific results could be hoped for from the absorption of thyroid juices and similar measures, and myself use these in suitable cases. Meanwhile, my present purpose is to relate such measure of success as has come to me, and indicate the lines upon which it has been obtained, holding in reserve the brilliant possibilities referred to.

I am inclined to agree with Raymond and Serieux,[4] who consider exophthalmic goiter a bulbar neurosis, manifesting itself in an exaggeration and permanence of the physiologic phenomena of emotion, placing the emotional state at the foundation of the disease as a pyschic anomaly, a derangement of vasomotor centers, coinciding with analogous troubles in other centers of the cerebro-spinal axis. There are to be found in this disorder certain associated psychoses, with evidence of hereditary taint, signs of physical degeneration, mal-development of the facial area in the central cortex, vaulted palates, etc., seen in developmental neuroses.

Of the three features that constitute the classic

[1] Read by title at the meeting of the American Medical Association, June 6, 1893.

[2] Journal Amer. Med. Assoc., April 14, 1888.

[1] Putnam: Trans. Association of American Physicians, 1893.

[2] Dieulafoy: La France Médicale, August 19, 1892.

[3] Times and Register, March 18, 1893.

[4] Revue de Médecine, December, 1892.

symptom-group of Graves' disease, it is now admittedly possible for any two to be absent, or at least not constantly recognizable. It is common to find the thyroid enlargement absent; next most common to find exophthalmos not present; and possible, though rare, to find the circulatory disturbance to be practically wanting, in the presence of the ocular and thyroid symptoms.

The most important phenomena of the disease are connected with disturbed circulation. One or another of the more picturesque symptoms may be temporarily absent; not seldom the thyroid irregularly enlarges and collapses; the exophthalmos also comes and goes; but in my experience there is seldom an absence of irregular or easily disturbed vascular conditions. In two cases I have seen the more distressing symptoms quite disappear, but either slight exophthalmos or moderate thyroid enlargement, or both, remained. I have had two ladies under observation for seven and ten years respectively, who are practically well, and in whom the exophthalmos persists; and another who has considered herself well for over a year, but whose thyroid is still noticeably large. The thyroid enlargement seems to me to be the first symptom to definitely disappear, although in the case referred to it has persisted after the subsidence of the other symptoms.

The next most common feature is the relaxed state of the sweat-glands. This seems to be a uniform feature, and remains much the same in most cases. I have seen cases of slight vasomotor ataxia in which flushes came and went; but ordinarily there is a pallid, oleaginous appearance, which persists, giving the skin a macerated look, with rarely any offensive odor. Urination is not commonly disturbed; hemoglobinuria is rarely seen; purpuric areas occasionally appear; and slight hemoptysis and hematemesis may take place; nor is it common to see edema. In one particularly severe case, which terminated in wild insanity, I have noted persistent edema; when it occurs it only appears intermittently.

The temperature fluctuates considerably. In first interviews, which are attended with a certain element of nervous emotion, it is quite common to find the temperature above 100° F. In the same individual a short time afterward, the temperature taken in the mouth may be subnormal. In such cases as I put to bed for systematic rest, a rise of temperature is almost always noted for the first three or four days, followed by a steady falling until the normal is passed, the temperature remaining subnormal for three or four days, and then creeping back to the normal, and remaining at this level, or a little below, for several weeks.

The rapid variation in arterial tension accounts for the intermittent albuminuria, the mild polyuria, and other changes in the renal secretion, as well as for the occasional blood-spitting, together with disturbances of special sense, as roaring in the ears, headache, fluttering of the heart, altered heart-sounds, dyspnea, etc. The tremor that Gowers refers to I have not often seen, except in the form of occasional tremulousness of the lip or tongue, and then mostly under excitement; but a more or less constant vibratile quality in the voice is always suspicious. The sensory disorders are not many, headache being the chief, as in one of the cases here related, in which this persisted throughout life, almost daily, worse in the morning and in certain attitudes, as stooping down, and sometimes suddenly becoming so severe as to cause vomiting.

The Von Graefe lid-symptom seems to be regarded as of less significance among clinicians as time goes on. Sharkey[1] has examined 613 patients of all kinds, and among them found 12 that presented this symptom. He states that in people of good health it can be frequently induced by staring fixedly. It constantly fails to be present in Graves' disease, and its diagnostic significance is small. The electric resistance of the body, too, has failed of its early promise as a useful indication, as hopefully outlined by Norris Wolfenden. It had come to mean little to me long ago, and observers generally now regard it as of small account. H. W. Carduff[2] finds the electric resistance diminished in 15 of 20 cases of exophthalmic goiter, and remarks that the phenomenon is worthless as a diagnostic sign, as it varies with the moisture of the skin. When we consider that the moisture of the skin is almost constantly marked in well-defined instances of exophthalmic goiter, the only wonder is that much significance was ever attached to an alteration in the electric resistance as a symptom.

The order in which the characteristic symptoms appear is not always easy to determine. I am inclined to agree with Jaccoud,[3] who puts it as follows: palpitation, dilatation of arteries, enlargement of thyroid, exophthalmos. A point that seems to me to be useful, though rather a result of the characteristic changes that take place, is the diminished respiratory range or chest-expansion pointed out by Fiske-Bryson.[4] I had noticed that the respiratory movements of sufferers from exophthalmic goiter were almost as much disturbed as the cardio-vascular mechanism; and, purely from the therapeutic standpoint, had been accustomed to urge upon patients the use of forced inspiration. This seems to me a very tranquilizing measure, and one that is a proper part of systematic hygienic measures. In the more recent cases under my observation this limited ex-

[1] British Medical Journal, October 25, 1890.
[2] London Lancet, February 28, 1892.
[3] New York Medical Journal, February 22, 1891.
[4] Ibid., December 14, 1889.

pansion of the chest has been observed. Bronzing of the skin is not common; uniform changes, as pointed out in my original paper, such as a greasy, macerated-looking skin, are much more likely to be present, possibly as a result of the paretic condition of the surface-vessels. There seems also to be an excessive secretion of skin-oil, recognizable by the touch as well as the appearance.

Stellwag's sign—retraction of the upper eyelid—I have rarely seen.

Charcot has somewhere directed attention to the importance of elevation of the temperature as a diagnostic point. In my experience, such an elevation only persists when the patient is upon his feet and moving about. As I have pointed out elsewhere, when such a one is put to bed, the temperature subsides after a few days and becomes subnormal.

Mackenzie [1] makes the statement that when the clinical picture of exophthalmic goiter is incomplete the disease is rarely fatal; but when the picture is well-marked, the disease is dangerous to life. There are times when death occurs apparently from an overwhelming disturbance of circulatory balance —in short, a death from the disease itself; but it rarely seems to be due to trophic changes referable to the pathology of the thyroid gland.

My conviction is that exophthalmic goiter is much less rare than is generally believed, and that it is also far more amenable to treatment than is usually taught. Unless there coexists serious structural disease, excellent results, in more instances a practical cure, may be looked for if the treatment be persistently and systematically pursued. The results in my own cases have taught me to give a favorable prognosis; and if specific medication with thyroid juices and thyroid removal prove of value, these may add much greater possibilities.

It has been my experience to see several cases not clearly definable as Graves' disease, wherein the symptoms of cardio-vascular erethism were most distressing. These were often superadded to organic disorders and generally complicated with hysteria. The patients responded most promptly to tranquilizing agents directed to the loss of vasomotor balance and, in so far as this feature went, were readily relieved. It is reasonable to assume that from such cases as these, full-blown instances of exophthalmic goiter may and sometimes do arise.

A very important point clinically is that too often the significance of these symptoms is not recognized and treated, as well as that the difficulties in inducing such patients to persist in systematic measures for the long periods required are very great.

The treatment of exophthalmic goiter is modified in various hands by the conception of the physician as to the nature of the condition, whether it be a blood, cardiac, neurotic, or thyroid disorder. It must be also recognized that a person suffering from this trouble is always on a lowered plane of health. The degree of this may be much more serious than would appear on the surface; certainly a modification of the ordinary activities of the patient must be outlined, and under most circumstances very little laborious work allowed. When it is possible, absolute rest in bed is indicated for a time. A diet of the most uniform and tranquillizing kind, such as milk, the regular milk-diet such as Kareli outlined, is usually of use to bring the disturbed circulation as soon as possible on an even plane. This may be amplified by a judiciously selected diet in proportion to the depression of nutrition that may exist.

The diathetic element that may be back of the disorder needs careful consideration; in some of my cases it was found to be lithemia. Along with attention to the diet there must be large care in the treatment of the skin. This may take the form of salt sponge-baths, given by another while the patient is in bed, and finally, as strength improves, taken by himself; a tablespoonful of salt in a basin of water regularly applied on waking in the morning, after some little fluid nourishment; this to be followed by a brisk, rough rub from head to heel; afterward breakfast. When the skin is greatly at fault, this may be repeated before bedtime with advantage, or to supplement the skin-stimulation the dry salt towel may be used more or less often; again, an aromatic vinegar on a damp sponge may be applied to the more leaky parts, as the soles of the feet and the palms of the hands, about the small of the back. This aromatic vinegar can easily be made in any household by taking a pint of good white wine-vinegar and adding a dozen or more of cloves, allspice, and whole peppers, and allowing it to steep. A tablespoonful or more of this applied on a moistened sponge is very comforting and relieves the over-damp skin wonderfully. In giving massage it may be important to use drying powders, such as talc or lycopodium, until the patient can endure the manipulations. A measure recommended by some, notably by J. L. Corning, for giving tone to the skin is hot bathing followed by cold ablution, but for my part I have rarely seen the need of it. During conditions of great restlessness, no doubt this would aid in securing sleep. The hot, salt sea-water baths might be very useful to this end, and I have, indeed, ordered them temporarily in a few instances, with advantage, but my dependence is rather upon the cool salt water, the aromatic vinegar, and systematic surface-rubbing, as well as upon such internal remedies as hyoscin hydrobromate in sufficient doses.

Wool or silk should always be worn next the

[1] London Lancet, September 20, 1891.

skin, inasmuch as the cause of the disorder is often closely related to surface-chill. The frequent changing of the underwear, too, is a minor point of large significance. It is bad enough for the surface-exudations to remain uneliminated, but it is worse to keep them locked in by the clothing. If skin-leakage be extreme, it is important to change the underwear several times a day, employing, if possible, a brisk dry rub each time.

For the over-acting, tumultuous heart, there is nothing so certain to steady its beat and lower its frequency, and generally to tranquillize the whole cardio-vascular mechanism, as ice applied to the precordium. Care is needed, of course, lest some damage be caused by this very powerful agent. Ice-bags over the spinal region, too, exercise some value. In conditions of profound tumult of the heart this is valuable, and many times is useful as a more or less routine measure. Galvanization of the great sympathetic and faradization of the cardiac region are highly prized by a number of observers, but I have never seen them do the wonderful things that Charcot, Rockwolf, and Lewandowski have claimed for them, although I think I have seen them do distinct good in a few cases. I have given faithful trial to the carbazotate of ammonium, as recommended by Hammond[1] and by Boaz,[2] in three cases, with no noticeable result, while the offensiveness of the drug is beyond description.

Many writers say that digitalis will not modify the heart's action. Alone probably not, and yet I have had very good results from digitalis. Strophanthus seems to do better, although physiologically one might not expect it. Spartein sulfate may be even better yet. Many different kinds of vascular tonics are useful in this disorder, and it cannot always be predicated which will do best. The one drug that has served me best of all, and to which I look with great confidence in modifying the discomforts and dangers of this disorder, is hyoscin hydrobromate. This serves to tranquillize the overwrought emotions, puts the economy into a reposeful state, dries the surface over-secretions, oftentimes without causing uncomfortable drying of the throat, relieves the feeling of chilliness by checking surface-moisture, exercises a beneficial effect upon the renal vaso-constrictors, and in many ways may be regarded as a most useful ally. In one case here reported this was the chief agent employed in subduing a headache that had existed for half a lifetime and for which much medication had been endured; to be sure, galvanization of the thyroid was also used, and some general measures directed to the patient's nutrition and relief from laborious occupations enforced. In the case of this poor woman, who was compelled to do a large amount of daily work, to prepare her own food and her husband's, and to sustain and carry on many responsibilities, prompt recovery took place from a condition that had persisted for many long and weary years. I will not say too much about the value of hyoscin hydrobromate, because the notes of my cases show this well enough. Dr. S. Solis-Cohen gets excellent results from picrotoxin.[1]

Certain ones, as Kümmell,[2] have removed the thyroid in cases of exophthalmic goiter, leaving part of the left lobe, with favorable results. It does not seem to me that all of the good attributed to this operation lies in the removal of the thyroid, much of it possibly being the enforced rest and regulation of living. Nevertheless, I should welcome any specific agency, such as the surgical removal of an offending part, or the use of thyroid juices internally, if we could by this means radically negate the effects of errant thyroid activities.

Chevalier[3] maintains that the tachycardia is due to an affection of the nucleus of the vagus, the struma and exophthalmos being dependent upon the tachycardia, and declares the cause of the disease to be an intoxication of the nervous system through by-products of the thyroid. Many tonics might be considered in this connection. Iron is frequently indicated, especially the more digestible forms, as the carbonate, Flint's chalybeate pill, the vegetable salts, the malate, and the old-fashioned and reliable lactate. However, it is needless to go over a list of tonics suited to varying conditions and cases. Nutrient tonics are the best; good diet, very carefully adjusted to the needs of the patient. This at first may, with advantage, consist largely of milk, then enlarged by graduated increments, as the case demands, with aids to digestion, and then malt and cod-liver oil. The mechanical tonics, massage and faradic electricity, are of great value. The entire environment of the individual should be carefully reviewed, emotional disturbances rigidly

[1] New York Medical Journal, January 25, 1891.
[2] Western Medical and Surgical Reporter, September, 1891.

[1] Extract from letter of Dr. S. Solis-Cohen: "Concerning my use of picrotoxin in cases of Graves' disease and other forms of vasomotor ataxia, I would remind you that I learned the practice from Prof. Bartholow, having seen the good results in a case of exophthalmic goiter, attended with purpura, treated at the Jefferson Medical College Hospital during my service as Chief Clinical Assistant. I give from one-eightieth grain to one-twentieth grain thrice daily, the indications being found principally in the vascular phenomena of the cutaneous and mucous surfaces and glands; that is to say, sweating, profuse discharge of saliva, coryza, and tendency to heat and redness of the skin, suggest the use of this drug. In cases showing constriction rather than relaxation of vessels, it is less applicable. I have sometimes found the combination of ergot and picrotoxin better than picrotoxin alone; in other cases barium chlorid (one-eighth grain) has been combined with it. . . At the same time I have considerable confidence in picrotoxin as a tonic to the taxic power, or center, in these cases of vasomotor disorder."
[2] Deutsche med. Wochenschr., May 15, 1891.
[3] Neurolog. Centralbl., September, 1892.

excluded, and, when possible, physical and mental strains removed. The isolations of a complete rest-treatment probably offer the very best opportunities of all; and finally, graduated activities in the form of Swedish exercises, systematized outings, and restful life in a dull country-place. The correction of refractive errors of the eye is always of the greatest value.

(To be concluded.)

EFFECT OF CARBON DIOXID, CARBONIC OXID, SULPHURETED HYDROGEN, WATER-GAS AND COAL-GAS ON ANIMAL LIFE.[1]

BY JOSEPH R. WILSON,
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As the health of every individual is dependent upon the purity of the atmosphere, a knowledge of the effect on animal life of impurities in the air is of the highest importance to the community at large, but of special importance to those who work in coal, silver, lead, copper, or gold mines, or at iron furnaces, coke ovens, etc. In such places impurities often exist, such as

	S. D.
CO_2—"Choke-damp," or carbon dioxid . .	1.529
CO—"White damp," or carbonic oxid . .	0.9678
H_2S—Sulphureted hydrogen, or hydrogen sulphid	0.1912

The statistics compiled by me from the indices of the library of the College of Physicians, Philadelphia, one of the most complete institutions in the world, show that 90 per cent. of the total scientific experiments on the effects of noxious gases on animal life have been made by the Germans and the French, and for the last decade scarcely any experiments have been made by scientists of any nationality, the results obtained by our forefathers being accepted with a credulity seldom encountered in other branches of science. In addition to this, the poverty of information in the standard references on this subject is so great that were any particular knowledge required, it would be necessary to make new experiments. With these facts before me, in grouping the results obtained in experiments with carbon dioxid, carbonic oxid, and sulphureted hydrogen on animal life, the medical fraternity will at least have a condensation of experiments for reference from many authorities, combined with the results of my own experiments. I claim that my experiments are absolutely accurate, as the means employed for mixing the different atmospheres (the Shaw gas-tester) is acknowledged to be as nearly perfect as human agency can make anything, and has been awarded the Elliott Cresson and the Scott Legacy medals for accuracy—the highest awards in the gift of the Franklin Institute. This tester is to gases what weights and scales are to solids.

It is not my intention to go into the constituents of the gases named, there being no necessity for my doing so in this paper. I have simply one object in view: to describe, as the result of recent experiments, the effect produced by them on animal life. The Shaw gas-tester, which I used for mixing my gases in the centesimal proportions desired, is an apparatus simple, convenient, and accurate, consisting of two pumps with pistons attached to a graduated arm, so that one cylinder can be set to pump 10 per cent. of gas and the other 90 per cent. of air, or *vice versa*, or any per cent. to the lowest fraction. It is the only instrument in the world capable of mixing gases accurately, rapidly, and continuously in any per cent. desired, the product of the two cylinders being forced through an injector or mixer before delivery.

The animal under treatment is placed in a bell-shaped glass cylinder sixteen inches high, of four inches diameter at the neck and eight inches at the base. The cylinder is placed horizontally on the table, with the neck toward the operator, and is connected with the instrument at the neck by means of a rubber tube. The animal rests on all fours, facing the operator, with its nose near the aperture through which the gases enter the cylinder from the instrument or mixer.

The end of the bell-shaped glass cylinder is entirely open to the air, so that the mixture of gas and air is discharged and replaced every four seconds by each stroke of the pump, always maintaining a constant mixture, preventing stratification or contamination through the exhalations of the animal. The cylinder, being of glass and perfectly transparent, enables the operator to observe every change in the condition of the animal.

The difference in results obtained by the various authorities has caused me to make the following experiments to satisfy myself, an accurate knowledge on this subject being necessary to the pursuit of my profession, and I am well aware of the great difficulties experienced by my predecessors in making accurate mixtures of gases, owing to the crude appliances for this purpose at their command.

As a prelude to my experiments I will give the results obtained with carbon dioxid by scientists whom we are accustomed to quote:

CARBON DIOXID.

	Per cent.
J. H. Merrivale says: It extinguishes lights and is fatal to animal life.	
J. J. Atkinson says: Dangerous to life . .	8
Lights extinguished	10
Fairley's *Catechism:* Dangerous to life . .	3
Will cause death quickly	10
Light will burn in	10 to 20

[1] A lecture delivered before the students and Faculty of the Philadelphia College of Pharmacy, November 21, 1893.

	Per cent.
Sir H. Roscoe's *Chemistry:* Will not support combustion of candle	3 to 6
Dr. A. Smith: Lights extinguished	about 2
Would suffocate	4

Watts' *Dictionary of Chemistry* says: "Animals immersed in it soon die, not only from want of oxygen, but in consequence of a direct poisonous action, violent spasms being sometimes produced; sometimes complete atony of the cerebral faculties."

The *Encyclopedia Britannica*, vol. v, p. 87, says: "Will not burn, neither does it support combustion."

Dr. Karl Friedlander, of Berlin, in experiments on animal life states that "62.8 per cent. killed a rabbit in twenty-seven minutes; 65 per cent. killed a rabbit in forty-five minutes," the higher per cent. in this instance taking longer to kill the rabbit than the lower per cent., showing a wide variation in his tests, which I can only account for by the imperfect appliances at his command for placing definite quantities of gas in the atmosphere, and maintaining a constant mixture of definite proportions. Rabbits, like human beings, have their ailments, and I have found in the course of my experiments that disease, in the shape of a fatty accumulation about the heart, disqualifies the animal entirely for tests of this nature, death resulting in one-tenth of the time necessary to produce the same result in a perfectly healthy animal; but in the foregoing instance the difference in time of immersion in such a high per cent. is not great enough for me to ascribe the difference in effect to any organic disease, but rather to the imperfect mixing of the gases.

In all of my experiments I have found that the smaller the animal the sooner it succumbed to poisonous gases. My first experiments were made with small birds; then I tried mice, after which I bestowed my attention on guinea-pigs, finally selecting the rabbit upon which to conduct the experiments herewith presented.

EXPERIMENTS WITH CARBON DIOXID.

EXPERIMENT No. 1. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 10 per cent. of CO_2 and 90 per cent. of air. After one hour and seven minutes the rabbit gave no indication whatever of being affected, so I released it and allowed it to run with several others of its species, the effect of its treatment, contrary to expectation, being great exhilaration instead of stupefication.

Result. 10 per cent. of CO_2 and 90 per cent. of air; one hour and seven minutes' inhalation—exhilaration.

No. 2. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 25 per cent. of CO_2 and 75 per cent. of air for one hour, at the end of which time the animal showed no indication whatever of being affected, and when released and placed with others exhibited as much liveliness as they.

Result. 25 per cent. of CO_2 and 75 per cent. of air; one hour's inhalation—unaffected.

No. 3. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 50 per cent. of CO_2 and 50 per cent. of air. At the end of two minutes the rabbit showed signs of being affected; at the end of three minutes it commenced to gasp regularly every two seconds; at the end of six minutes the gasps were three seconds apart; ten minutes, the gasps were four seconds; twelve minutes, the gasps were six seconds; fourteen minutes, the gasps were eight seconds; fifteen minutes, the gasps were nine seconds; sixteen minutes, the gasps were ten seconds; seventeen minutes, death ensued.

Result. 50 per cent. of CO_2 and 50 per cent. of air; seventeen minutes' inhalation—death.

No. 4. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 75 per cent. of CO_2 and 25 per cent. of air. At the end of two minutes the rabbit commenced to pant rapidly; three minutes, it became stupefied and gasped every two seconds; five minutes, the gasps were three seconds apart; seven minutes, the gasps were five seconds; eight minutes, the gasps were six seconds; nine minutes, the gasps were ten seconds; ten minutes, death ensued.

Result. 75 per cent. of CO_2 and 25 per cent. of air; ten minutes' inhalation—death.

No. 5. I placed a mouse in a glass cylinder and pumped in an atmosphere of pure CO_2; death was instantaneous.

Result. Pure CO_2; death instantaneous.

No. 6. I placed a mouse in a glass cylinder and pumped in an atmosphere of 25 per cent. of CO_2 and 75 per cent. of air. At the end of three minutes the mouse seemed slightly affected, but kept moving around the cylinder—in this test held vertically. At the end of ten minutes the conditions were unchanged, and I displaced the atmosphere of 25 per cent. CO_2 with pure air. The mouse revived instantaneously on the first inhalation.

Result. 25 per cent. of CO_2 and 75 per cent. of air; ten minutes' inhalation; slightly affected, but recovered instantaneously in the fresh air.

No. 7. I placed a mouse in a glass cylinder and pumped in an atmosphere of 50 per cent. of CO_2 and 50 per cent. of air. At the end of ten seconds the mouse showed great exhilaration; twenty seconds, its activity was greatly reduced; thirty seconds, it became stupefied; thirty-five seconds, gave short gasps; forty-five seconds, the gasps were long and apparently painful; fifty-five seconds, death occurred.

Result. 50 per cent. of CO_2 and 50 per cent. of air; fifty-five seconds' inhalation—death.

Experiments 5, 6 and 7, are only given here to illustrate the fact that the smaller the animal the less the power of resistance to CO_2.

EXPERIMENTS WITH CARBONIC OXID.

The results obtained by scientists whom we are accustomed to quote, on the effect of carbonic oxid on animal life, are first epitomized.

H. Letheby, M.B., M.A., Ph.D., etc. late Professor of Chemistry and Toxicology in the Medical College of the London Hospital, says that 0.5 of 1 per cent. of CO killed small birds in three minutes; 1 per cent. in half the time; 2 per cent. renders guinea-pigs insensible in two minutes. In all cases the effects were the same. The animals showed no signs of pain; they fell insensible and either died at once with a slight flutter, hardly amounting to a convulsion, or gradually slept away as if in profound slumber. The post-mortem examination showed the blood to be a little more deeply red than usual.

Prof. A. R. Leeds says: "The operation of pure CO is so immediate as to prevent the lungs throwing off a single charge received."

Watts' *Dictionary of Chemistry* says: "It is a very poisonous gas, acting chiefly on the nervous system, causing giddiness when inhaled, sometimes acute pain in various parts of the body, and after a while complete asphyxia."

Buck, on *Hygiene and Public Health* says: "It is not so immediately fatal as carbonic acid gas."

The *Enclycopedia Britannica*, vol. v, p. 87, says: "It is an extremely poisonous gas, being capable of displacing the oxygen in the blood, owing to a compound with the hemoglobin with which the oxygen is ordinarily combined."

The *American Encyclopedia*, vol. iii, p. 775, says: "It is more irrespirable and poisonous than carbon dioxid. Its inhalation from furnaces sometimes causes immediate asphyxia to the workmen."

I will now submit the results of my own experiments on the effect of carbonic oxid on animal life, but have to omit several important tests owing to the carelessness of a servant in destroying my notes.

No. 1. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 2 per cent. of CO, and 98 per cent. of air. At the end of ten minutes the posterior extremity of the rabbit became paralyzed; at the end of eighteen minutes the fore-legs became paralyzed, and at the end of twenty minutes the rabbit became semi-comatose; at the end of forty-five minutes its condition had not altered; on being placed in the fresh air it revived sufficiently to maintain its equilibrium.

Result. 2 per cent. of CO and 98 per cent. of air; revived in fresh air after forty-five minutes' inhalation of the gas.

No. 2. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 2.5 per cent. of CO and 97.5 per cent. of air. At the end of five minutes the rabbit became semi-comatose, but on being placed in the pure air, it recovered almost immediately.

Result. 2.5 per cent. of CO, and 97.5 per cent. of air; revived in fresh air after inhalation of the gas five minutes.

No. 3. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 4 per cent. of CO, and 96 per cent. of air. Death resulted in four and one-half minutes.

Result. 4 per cent. of CO and 96 per cent. of air; four and one-half minutes' inhalation; death.

No. 4. I placed a mouse in a glass cylinder and pumped in an atmosphere of 0.2 of 1 per cent. of CO and 99.8 per cent. of air. At the end of six minutes the mouse showed no signs whatever of being affected.

No. 5. I then increased the atmosphere to 0.5 of one per cent. of CO and 99.5 per cent. of air. At the end of five minutes the mouse showed no signs whatever of being affected.

No. 3. I now increased the atmosphere to 1 per cent. of CO and 99 per cent. of air. At the end of thirty minutes, the mouse showed no signs of being affected. I then gave it fresh air for one minute, and increased the atmosphere to 2 per cent. of CO, and the mouse died in ten minutes with a total relaxation of all the muscles.

Result. 2 per cent. of CO and 98 per cent. of air; ten minutes' inhalation; death.

No. 7. I placed a mouse in an atmosphere of 2.5 per cent. of CO and 97.5 per cent. of air, and the mouse died in five minutes.

Result. 2.5 per cent. of CO and 97.5 per cent. of air; five minutes' inhalation; death.

No. 8. I placed a mouse in an atmosphere of 10 per cent. of CO and 90 per cent. of air, death resulting in three minutes.

Result. 10 per cent. of CO, and 90 per cent. of air; three minutes' inhalation, death.

In the absence of the missing tests, I have included experiments Nos. 4, 5, 6, 7, and 8, simply to illustrate the fact that the smaller the animal, the less the power of resistance to CO.

SULPHURETED HYDROGEN.

I note again the results obtained by scientific authorities whom we are accustomed to quote, on the effect of sulphureted hydrogen on animal life.

Watts' *Dictionary of Chemistry*, p. 203, says: "An atmosphere of one-tenth of 1 per cent. of this gas proves fatal to lower animals."

Public Health Reports and Papers, vol. iii, p. 75, 76, says: "It is poisonous, and its action on arterial blood is a common lecture-table experiment."

The *Encyclopedia Britannica*, article Chemistry, vol. v, p. 500, says: "It cannot be breathed with impunity, frequently giving rise to nausea and vertigo, even when much diluted."

The *American Encylopedia*, vol. ix, p. 130, says: "Thenard found that a small bird would die in air containing fifteen one-hundredths of 1 per cent. and a horse in air that contained one-quarter of 1 per cent."

The results of my experiments on the effect of H_2S on animal life are as follows:

No. 1. *a.* I placed a rabbit in a glass cylinder and pumped in an atmosphere of 1 per cent. of H_2S and 99 per cent. of air.

b. I placed another rabbit in another glass cylinder and pumped in an atmosphere of 1 per cent. of H_2S, and 99 per cent of air, simultaneously with No. 1, using two Shaw gas-testers as mixers for the operation, both connected with the same bag of H_2S. Death occurred simultaneously in cylinders Nos. 1 and 2, at the end of one minute, preceded by violent convulsions which lasted about ten seconds.

Result. 1 per cent. of H_2S and 99 per cent. of air; one minute's inhalation; death.

No. 2. *a.* I placed a rabbit in a glass cylinder No. 1, and pumped an atmosphere of 0.5 of 1 per cent. of H_2S and 99.5 per cent of air.

b. I placed another rabbit in a glass cylinder No. 2, and pumped in an atmosphere of 0.5 of 1 per cent of H_2S and 99.5 per cent. of air simultaneously with No. 1, using two Shaw gas-testers as mixers for the operation, both connected with the same bag of H_2S. Death occurred simultaneously in cylinders 1 and 2 at the end of three minutes, preceded by violent convulsions which lasted about fifteen seconds.

Result. 0.5 of 1 per cent. of H_2S and 99.5 per cent. of air; three minutes' inhalation; death.

No. 3. *a.* I placed a rabbit in glass cylinder No. 1 and pumped in an atmosphere of 0.2 of 1 per cent. of H_2S and 99.8 per cent. of air.

b. I placed another rabbit in a glass cylinder No. 2, and pumped in an atmosphere of 0.2 of 1 per cent. of H_2S and 99.8 per cent. of air, simultaneously with No. 1, using two Shaw gas-testers as mixers for the operation, both connected with the same bag of H_2S; death resulted simultaneously in cylinders Nos. 1 and 2 at the end of ten minutes.

Result. 0.2 of 1 per cent. of H_2S and 99.8 per cent. of air; ten minutes' inhalation; death.

No. 4. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 0.1 of 1 per cent. of H_2S, or the 0.001 part, and 99.9 per cent. of air; death resulted in thirty-seven minutes.

Result. 0.1 of 1 per cent. H_2S, or the 0.001 part, and 99.9 per cent. of air; thirty-seven minutes' inhalation; death.

NOTE.—In all of the foregoing tests the rabbits were seized with convulsions from ten to fifteen seconds after immersion in the poisonous atmosphere, which lasted on an average about twelve seconds.

No. 5. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 0.025 of 1 per cent. of H_2S and 99.975 per cent. of air. At the end of two hours the rabbit showed no signs whatever of being affected, so I released it.

Result. 0.025 of 1 per cent. of H_2S and 99.975 of air; two hours' inhalation; unaffected.

EFFECT OF ILLUMINATING OR COAL AND WATER GAS ON ANIMAL LIFE.

The frequent occurrence of accidental deaths from illuminating gas has caused me to make a series of experiments on this subject, with a view to determining just how much risk we run in having a small escape of gas in our bed-rooms, for instance, and the results obtained ought to act as a warning to all who are in any way careless in turning off the stop-cocks before retiring, or who carelessly turn the gas low near a draught, and find it blown out the next morning and the room filled with gas.

No. 1. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 75 per cent. of illuminating gas (water and coal gas) and 25 per cent. of air. The rabbit was immediately seized with violent convulsions and death ensued in two minutes.

Result. 75 per cent. of illuminating gas (water and coal gas) and 25 per cent. of air; two minutes' inhalation; death.

No. 2. I placed a rabbit in a glass cylinder and pumped in 25 per cent. of illuminating gas (water and coal gas) and 75 per cent. of air; on the third inhalation the rabbit was seized with violent convulsions and urinated freely; at the end of one minute the convulsions ceased, and at the end of four minutes death ensued.

Result. 25 per cent. of illuminating gas (water and coal gas) and 75 per cent. of air; four minutes' inhalation; death.

No. 3. I placed a rabbit in a glass cylinder and pumped in 15 per cent. of illuminating gas (water and coal gas) and 85 per cent. of air; without any struggling it sank into a comatose state; at the end of three minutes it struggled feebly; at the end of four minutes urinated, and at the end of six minutes died.

Result. 15 per cent. of illuminating gas (water and coal gas) and 85 per cent. of air; six minutes' inhalation; death.

No. 4. I placed a rabbit in a glass cylinder and pumped in 10 per cent. of illuminating gas (water and coal gas) and 90 per cent. of air; at the end of thirteen minutes the rabbit was seized with a convulsion and died in five seconds.

Result. 10 per cent. of illuminating gas (water and coal gas) and 90 per cent. of air; thirteen minutes' inhalation; death.

No. 5. I placed a rabbit in a glass cylinder and pumped in an atmosphere of 5 per cent. of illuminating gas (water and coal gas) and 95 per cent. of air; at the end of ten minutes the rabbit was seized with severe convulsions, which lasted twenty seconds; at the end of twenty minutes it commenced to gasp, and at the end of thirty minutes death ensued.

Result. 5 per cent. of illuminating gas (water and coal gas) and 95 per cent. of air; thirty minutes' inhalation; death.

I did not analyze the illuminating gas for its constituents, but the gas used was Philadelphia City gas, and I believe that it contains about 30 per cent. of CO.

I have other experiments on hand on CH_4, carbureted hydrogen, or fire-damp; also on the effect of carbon dioxid, or choke-damp, on lights, the results of which it will afford me pleasure to make known in my next paper.

HEALTH-RESORTS OF THE WEST AND SOUTHWEST.[1]

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GYNECOLOGIST TO ST. FRANCIS' HOSPITAL.

So much has been said and written of Colorado, New Mexico, Texas, Arizona, and Southern California as places of residence for invalids, that it is not now a pleasant task to add to this too abundant literature; and if it were not for the fact that a visit to the chief points of resort in those States had shown me the fallacy of many of the opinions of my coworkers in the East, this paper would be unnecessary.

The opportunity to observe, compare, and examine into the respective merits of these localities from an impartial standpoint is not given to many active physicians, and the circumstances that have made it necessary for me to spend nearly a year among these resorts should be turned to account.

Too often the climatologist in writing of a certain place becomes an advocate and, perhaps unconsciously, paints a picture that patients find too highly colored, and reports go back to the medical adviser in the East that do not conform to his preconceived notions of what the conditions should be. This is unfortunate, and ultimately injures both the place and the advocate. The plain truth would be better for all.

To start with, absolute perfection of climatic conditions is not to be had anywhere. In the second place it must be borne in mind that tables of mean temperature and relative humidity are statistical records that may be juggled and made to show almost anything. Then again, there are dozens of other things that bear on the welfare and comfort of the health-seeker, and they should all be considered.

The belt of high table-land (a part of the summit plateau) extending along the eastern range of the Rocky Mountains, and in which Cheyenne, Denver, Colorado Springs, and Manitou may be found at the north, and Los Vegas, Trinidad, and Santa Fé farther south, is a favorite place for the assignment of cases of pulmonary tuberculosis.

The altitude varies from about five thousand feet to something over seven thousand feet. The air is invigorating, even stimulating. There are few days on which the sun does not shine, and the dryness is all that the greatest advocate of a dry climate could ask. During the summer months there is a moderate rainfall, but it comes in showers lasting a few hours only, and is followed by sunshine and blue sky. Gray and clouded skies, and day after day of rain such as the Atlantic seaboard is subject to, are unknown; and it is the proud boast of the people of this plateau that they have about three hundred days of sunshine in a year.

The advantages of this territory are then—the altitude, dryness, abundance of sunshine, the peculiarly stimulating and invigorating qualities of the atmosphere, and, I would add, the purifying effects of the occasional high winds, which are so unpleasent while they last and which are so often cited as a great objection.

Other features that present themselves for consideration are the extremes of temperature between day and night and between one day and the next (winter or summer); the dust-storms or sand-storms; the pall of smoke that is inseparably connected with all large towns or cities where there are railroads or factories (for none but bituminous coal is used anywhere in the region considered).

Denver is a very smoky city and in the winter season sends a trail of black clouds for miles out over the prairie. Even Colorado Springs of a winter's morning is overhung and enveloped in its own smoke-product, and the view of it from the plains is far from ideal. I do not desire to convey the impression that these cities are dark and dingy, as are Pittsburg and Chicago—the free circulation of air would prevent that even if the smoke were much thicker. I am speaking of them as health-resorts, and of this condition as existing to an undesirable degree.

Colorado has an admirable winter climate, but from November 1st to March 1st it is not a tropical or semi-tropical climate by any means, and the patient who goes there then expecting to camp out, or wear his summer clothing, makes a great mistake. The nights are always cold—sometimes very cold—and the days are mostly bright, dry, and beautiful, but often very cold also, so that warm winter clothing, and an abundance of it, is needed.

A Philadelphia lawyer was sent to Colorado Springs last fall by one of the ablest physicians of his city, and was told that he could live out of doors, hunt, fish, shoot, etc. Wrapped in his heaviest ulster, and pacing up and down the hotel piazza in the sun to try and keep warm, the man told me that if he had given a legal opinion with as little knowledge of the facts as that he would have been disbarred.

Catarrhal diseases of the respiratory tract are the common and prevailing ailments in Colorado, and new-comers are greatly annoyed for a time with dry nose and throat, induced by the passage of the very dry air over the mucous membrane. Adaptation to the new conditions soon takes place, however.

As to other conditions, it may be said that the society is good, and the people educated and affable to an unusual degree. There is plenty of interest to

[1] Read at the Mercer County District Medical Society, October 10, 1893.

divert one; saddle-horses are abundant, cheap, and good; roads fair, and in some places excellent; food equal to that found anywhere; and stores well stocked for all one's needs, but with prices for board and merchandise about a fourth or sixth higher than in the East. The houses are well built, warm, and comfortable, with ample provision for heating; electric lights and railroads are in all large towns; and first-class transportation, with good dining-car service, is present all over the States and to the East.

For certain well-selected cases Colorado is admirably adapted, but the medical men of the world make a mistake in fancying that all cases of pulmonary tuberculosis will do well in Colorado. Many tuberculous patients are hurried to the grave by a trip to Colorado. In some the disease is arrested for a time, to be accelerated later, while in others the arrest may be complete and permanent. Cases far advanced, very young patients with active disease—in fact, acute cases of tuberculosis do not do well here; indeed, they do not do well anywhere. The best results are had in slow non-febrile, and hemorrhagic cases of a subacute kind, in which there is an apparent effort to resist the disease, and when a degree of immunity may have been established. When valvular heart-lesions exist, or the kidneys are damaged, the patient should not go to Colorado.

Those who go and get the best results spend as much time out of doors as possible, and are guided as to exercise in that rarefied air by a good local medical adviser. Grave mistakes may be made if one yields to the stimulation of the rarefied air, and exercises violently. The effect of the air and altitude has been aptly spoken of as "champagny," and patients must be cautioned to go slowly until they are acclimated.

The climate of Northern New Mexico, in the vicinity of Los Vegas and Santa Fé, is much like that of Colorado Springs. It is, perhaps, not so subject to sudden change, and on the whole is warmer. At Los Vegas there is a good hotel, where one may have all he requires, and Santa Fé is a very curious old town, full of interesting things.

In Southern New Mexico, Western Texas, and in Arizona, all of the conditions are very different from those of Colorado. The elevation is less, the soil is different, the water is for the most part so alkaline as to be very distasteful and disturbing to those not accustomed to it. The rainfall is much less, and the dust is dreadful. The sun is hot, and one very soon feels the enervation and *ennui* of it all. In addition to all this, the hotels in Albuquerque, El Paso, Tucson, Phœnix, and Yuma are bad beyond endurance. The food is wretched, and the people one meets, with a few notable exceptions, are not attractive companions.

There has been a disposition of late, on the part of some Eastern consultants, to send tuberculous patients to this arid country; but their ideas of it were not formed after seeing and carefully investigating its fitness for such cases, or none would be sent there by men of conscience.

A territory that offers no more in comfort, associations, entertainments, or natural advantages than this, and is by reason of its heat, dust, bad water, and poor domiciles so uncomfortable, and is in addition as unhygienic as the filthy habits of the native Mexican and Indian population can make it, is no place for a delicate Eastern invalid with a cultivated taste for many things that have become necessaries of life, and that are here unattainable.

Acquired tuberculosis is very rare, almost unknown, in Colorado. The natives do not have it or acquire it from the many invalids about them. Children of tuberculous persons grow up free from it, intermarry, and rear children who do not acquire it. In Arizona the disease is common and fatal among the native population—the Indians having it in a rapidly fatal form, like that which affects our negro; it not rarely runs a course of only a few weeks or a month or two.

In my opinion, if there is any place on this earth where all the conditions combine to create a field where a tuberculous patient would not do well, that place is Arizona. And when I add to this the mournful tales of actual disappointment and disaster here, I am constrained to beg my co-laborers of the East to cut Arizona from the list, and save their patients trials and discomforts, and themselves remorse. The few cases reported as doing well in Arizona are of a type that would do well anywhere, if they were relieved of care and worry, and could lead an out-of-door life—cases not far advanced, with good resisting powers, and, above all, able to exercise out-of-doors enough to create an appetite that is not critical.

Southern California, in the vicinity of Los Angeles, Pasadena, Riverside, Santa Barbara, or San Bernardino, is a charming State; and San Diego is quite as charming as any of the towns named, and claims a better climate in point of equability of temperature and greater dryness. This claim must be allowed. Here, again, certain invalids do well, for it is possible to be out of doors day after day, and, excepting in the rainy season, it is, any of it, dry enough.

The chief fault to be found with any of these points in Southern California is the same. One falls at once into the lassitude of the semi-tropical atmosphere, and suffers in body and mind from the consequent depression. The dust is bad in the dry season, and the heat of the sun is intense.

Pulmonary tuberculosis is a disease of house-builders, is contagious; it starts in portions of the

lungs least used, and its course is modified by the nutrition and nervous energy of the subject. To combat it, then, it is best to keep out of houses as much as possible (day and night); to avoid contact with tuberculous patients indoors; to "keep out of dust and out of crowds;" to fully expand the air-vesicles of every portion of the lungs many times a day, and best in a rarefied air; to maintain the nutrition by proper exercise and good food, and to remove the person from the cares and worries of business or household. Medicines may be auxiliary to this course, but can do little good when these means are ignored.

California has many conditions favorable to carrying out such treatment, and is no doubt well adapted to the needs of some cases.

Arizona and Western Texas have very unfavorable conditions, while Northern New Mexico, Colorado, and Southern Wyoming offer the very best to be found on this continent, if not on earth. The altitude, dryness, air-currents, sunshine, good-fellowship, and good living make these regions a Mecca to which a certain proportion of the tuberculous patients of the world may go and receive benefit, if they will but go early.

The opportunity is presented for the medical man of the East to exercise rare good judgment in the selection of cases to be sent to Colorado. If he waits till he has exhausted his pharmacopeial resources on a case, and at last sends the patient away to get him off his hands, he must expect no good to come of it. Grasp the situation early; don't temporize or procrastinate; state the *true* condition of things fairly and honestly to the patient or his friends, and make your recommendation with the force and earnestness you would use with any other prescription, when once a painstaking conclusion is reached, and you will not be reproached or feel remorse.

I feel it my duty to add that I believe the curative effect of climate has been vastly overestimated by the great body of medical men, and that a properly directed out-of-door life—rain or shine—will do nearly as much for us under the same conditions of freedom from work and worry as the best climate on earth could do. Returning as I do after a year of health-chasing, to find many of my old patients or acquaintances who have had tuberculosis for years (some as long as thirty), as well, or better, than I left them; to find others apparently well, or with greater improvement at least than I have made, is enough to set one to thinking.

I can recall many cases of the disease, well-advanced, with a history of hemorrhages, etc., that have entirely recovered in New Jersey; and many men of this sort went to the front in 1861, endured all the privations of campaigning, and came home sound and robust, cured by the out-of-door life—some, I regret to say, only to die of a re-development of the disease after a few years of work in the store or office.

Another fallacy is that if one goes West and improves, he must stay there. The truth is, if one improves after a long out-of-door holiday in the West, he cannot expect to go back to his old work and environment, wherever situated, without risk. If he comes back to continue (to a degree at least) the life led West he may hope for good health in the ratio of his approximation to his Western habits.

There are many places within a few hundred miles of New York where Nature is as undisturbed and the atmosphere as pure and free from dust and disease-germs as any that can be found west of the Mississippi. The Adirondacks in New York, the piny regions of New Jersey, or the wilds of Pike County, Pa., offer about all the advantages of Colorado, excepting extreme dryness and great elevation; and it is only under certain circumstances, and for certain well-selected cases, that these are necessary or desirable.

Patients who have not the strength or vitality to lead an out-of-door life in New Jersey will get little or no benefit in Colorado, and need not go to Arizona or California to find conditions no more favorable for their improvement than can be found in the Carolinas, Georgia, or Florida.

The rigors and vagaries of a Northern winter are as well avoided in the Southeast as in the Southwest; the feeble patient is nearer home and friends in case of severe illness or death; he avoids a long and exhausting railroad ride, and is free from the dust and unsanitary conditions of Arizona and the forsaken, far-away, friendless feeling so common in Southern California.

My advice about this whole matter is: keep out of doors, "out of dust and out of crowds;" for the favorable cases (with few exceptions) the place is less important than the kind of life followed; for the unfavorable ones, the nearer home and friends, the better.

An Early Sign of Pneumonia.—Morison (*Lancet*, No. 3656, p. 746), in several cases presenting the general symptoms of pneumonia in the absence of the ordinary physical signs, has observed a jerky expiration over a limited area, in which he subsequently found developed the usual signs of pneumonia. This jerky expiration is believed to be the first physical sign developed, and can be heard soon, if not immediately, after the rigor, before dulness or crepitation appears. The sign is more distinct in children, but has also been observed in adults. It is suggested that the phenomenon may be due either to the primary congestion interfering with the elasticity of the lung or to the better propagation of the heart-beats through a more readily conducting medium than the healthy lung.

ORIGINAL LECTURE.

I. TRAUMATIC EPILEPSY DUE TO FRACTURE OF THE SKULL, TREATED BY EXCISION OF BONE AND NEURECTOMY OF BOTH SUPRA-ORBITAL NERVES.

II. BURROWING ABSCESSES OF THE ABDOMINAL WALL AND PELVIS DUE TO ULCERATIVE APPENDICITIS, TREATED BY REMOVAL OF THE APPENDIX AND DRAINAGE.[1]

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THE first case that I shall present to you is a boy, of about twelve years of age, who was kicked in the middle of the forehead by a mule about two years ago, resulting in some form of fracture of the frontal bone. This was treated in the ordinary manner by antiseptic dressings, but no trephining was done, and no special exploration of the wound made. At the end of about six months the boy began to have true epileptic seizures. He bit his tongue and exhibited the ordinary convulsions of an epileptic. Close questioning of the patient has failed to find any other cause for the disease than the injury, and he is very positive that he had no convulsions previously to the time that his head was hurt. You see the scars of the injury and of a former operation, situated above the root of the nose and running horizontally. I find no other cicatrix of the scalp, but notice that the boy flinches when I make pressure over the left supra-orbital nerve. The right supra-orbital nerve is less sensitive, but seems more tender than is normal when such pressure is made over its point of exit from the supra-orbital foramen. The scar itself is also tender. In other respects the boy is healthy.

Dr. Graham, to whom he was brought some months ago, made an incision over the area of the fracture where a depressed scar was located. He found the frontal bone driven in by being bent very much in the manner of a green-stick fracture of the long bones in young children. He removed a narrow strip of depressed bone across the forehead. The epileptic seizures were absent for a time, but gradually returned. The boy comes back to-day to see if anything further can be done for deliverance from his disease. There is no history, so far as we are able to ascertain, of epilepsy in the family.

This, then, is a case of traumatic epilepsy, associated, with fracture of the skull in the frontal region. The question to determine is whether we shall do a secondary bone-operation by cutting down and taking out a portion of the skull, or simply lift up the scalp and endeavor to relieve irritation due to cicatricial pressure upon the supra-orbital nerves that are being pinched. If we make our incisions in the lines of the normal creases of the forehead as I have mapped out on the board, we shall make a less noticeable scar than if the incisions followed other lines. Instead of making a new scar I shall, moreover, make the incision in the position of the old one. I can reach the supra-orbital nerves, I think, by pulling down the flap, without making a vertical incision in the forehead. This will give rise to less disfigurement than if an additional incision is made in an oblique or upward direction.

In the first place, after using chalk for illustrations on the blackboard, or touching anything else, I again sterilize my hands. The finger-nails of the surgeon are one of the most dangerous factors in connection with operations. I may add that I use a saturated solution of potassium permanganate as a disinfecting agent for my hands, and wash them afterward in a saturated solution of oxalic acid in order to get rid of the discoloration made by the potassium permanganate. I have previously effectively used the finger-nail-cleaner and brush with hot water and soap.

As soon as the patient is etherized we shall remove the antiseptic dressing from his shaven head. His bowels have been opened, and the stomach has received no food for a number of hours. The patient, about a half-hour ago, was given a sixth of a grain of morphin and one one-hundred-and-twentieth of a grain of atropin hypodermatically. The amount of ether required during the operation will thus be less, and there will be less bother from accumulation of mucus in the bronchial tubes. By giving the drugs mentioned, one does not have the coughing and spitting due to accumulation of mucus in the bronchial tubes; the recovery from the ether is comfortable, with little vomiting; the patient will probably sleep for two or three hours, and there will be no necessity of giving an anodyne after the operation to relieve pain and soreness.

Although sterilization of the seat of operation has been assured in the wards by the nurses, and the part covered by antiseptic dressings, I usually re-sterilize my patients when they are put on the operating-table, giving the leg, or abdomen, as the case may be, a drenching with mercuric chlorid solution, 1:1000 or 1:2000. I do not suspect my nurses any more than myself, but I am not sure of anything. I have caught myself sometimes doing things entirely unconsciously, which might neutralize my previous efforts to be aseptic. Hence, I may seem hypercritical in my preparation for operation.

In skull-operations I ordinarily put a narrow Esmarch band around the head, which stops bleeding from the scalp; but here I cannot do it, as the incision will be low on the forehead, and I shall have to be satisfied with catching the vessels as they spurt.

I now make an incision across the front of the forehead along the line spoken of, and the assistant catches with hemostatic forceps such vessels as bleed. I can feel through the skin a depression due to the old operation. It is a little above my incision. I made the incision somewhat low because I want to get down to the supra-orbital notches, in order to excise the tender supra-orbital nerves. I can see now the point of the original operation. It is a little more inconvenient when you come to work upon a bone previously operated on, because cicatricial adhesions have taken place, and the parts have been thickened and somewhat displaced. You can see a dent in the bone where the craniectomy was made by the previous operator. It appears that the opening in the skull has actually closed with bone, which is unusual. I shall first take out the nerves. I

[1] A clinical lecture delivered by invitation at Rush Medical College, Chicago.

have cut, as you see, the supra-orbital artery, which is spurting and affords a guide to the notch, which I now show you with the supra-orbital nerve coming out of it. I clear away the tissues about the supra-orbital notch as much as possible, but I find it is hard to keep it in view, because the supra-orbital artery bleeds freely. The supra-orbital nerve in this instance comes through an actual foramen. It is not simply a notch with a band of ligament over it as we often find. I cut out the little piece of bone which makes the lower margin of the foramen in order to enable me to reach the nerve further back. I also nearly always cut out a piece of bone, when I operate on the infra-orbital nerve for trigeminal neuralgia, because if I chisel out the piece of bone completing the opening I can get hold of the nerve further back with forceps and draw it forward and break it off far back. A hemostatic forceps is the best instrument with which to seize this nerve. I have drawn out quite a portion of the nerve and broken it off, and will now scrape out the groove and get every particle of nerve-tissue out of it. The nerve of the other side, which although not so tender, seems to be a little sensitive, must now be exposed. On this side the nerve is not in a foramen, but in a notch. As I cut away the tissues in the notch the orbital fat protrudes, because there was not, as on the other side, a true foramen. I have done all I desire with these two nerves by cutting out a piece of each, and shall next devote my attention to the skull. The depression or groove in the bone is big enough to put my finger in, but it is not very deep, and it extends across the forehead. There is difficulty experienced in raising the periosteum, on account of its adherence to the bony scar due to the previous inflammatory process at the seat of operation. We have now made the area clear of periosteum. The depressed region extends over and crosses the median line of the frontal bone, upon which is the beginning of the superior longitudinal sinus.

Sometimes in opening the skull I use a trephine, and sometimes a chisel. I find that I use a chisel more and more, and the professors connected with this college tell me that they have almost abandoned the trephine. The trephine makes a round hole, whereas with a chisel one can get an opening of any shape that may be desired. The round opening made with the trephine is readily made of any shape by cutting away the edges with the gnawing forceps. In osteoplastic operations on the cranium, when it is desirable to preserve the bony flap and replace it, the chisel is the better instrument. It is here necessary to remove a considerable portion of bone, and I shall not want to replace it, because it is possibly the cause of the trouble by making pressure upon the brain or by irritating the dura. Therefore I shall not save the bone, and a trephine is as good as the chisel. If you expose the brain to remove a tumor or a cortical center for Jacksonian epilepsy, you keep the piece of bone in an antiseptic solution at a temperature of 105°, then replace it afterward, so that the perforation in the skull will be closed with bone. In this case I do not want to do that, because it is necessary to have the brain free from bony pressure.

The frontal bone is comparatively thin, and I have to proceed rather cautiously. If I open into the frontal sinus I may subsequently have to use a smaller trephine to cut through the posterior wall. I presume the two walls are close together, from what Dr. Graham has said. They may be solidified into one. Indeed, the boy is too young to have a well-developed sinus. A disadvantage in the use of the trephine is that if the skull is thicker in one part than in another it cuts unevenly, and you penetrate one side more quickly than the other, and by so doing you may injure the dura. At times therefore I use my segment-trephine, which cuts only along two-thirds of the circle. This instrument is employed after the groove has been started by an ordinary trephine. Here I shall start by perforating the bone with a trephine, gnawing the opening as large as is demanded. This aseptic trephine is one I devised to avoid having a hollow stem and a screw for the center-pin, which are so apt to get full of dirt and grease and become septic. The trephine is simply a cylindrical saw and cuts only in one direction, therefore I make semi-rotations with it in removing the button of bone. It is a good deal harder to get a trephine sharp and keep it so than a chisel, and this is another reason why the chisel is often the better instrument.

I show you the removed disc of bone, with a dent in it on the external aspect, through which the fracture passed. On the inner surface is a thick papule or osteophyte due to a new growth of bone, which pressed down on the dura. This projection of bone was made by the ossification of the fracture on the inner surface, where the vitreous table was more extensively fractured than the external table. This is sufficient to have caused the epilepsy.

A few months ago a patient came under my care who had sustained an injury of the head. He was struck on the temple by a lever or some part of an iron door which was thrown open against him. He was not treated by a physician, and had had nothing specially done for him. A few months after the injury he began to have epilepsy. I found in that case, as in this, a papule of bone like the top of a collar-button, which had been the result of an accentuated or punctured fracture due to the injury; yet the symptoms after injury were so slight that he never suspected that he had a fracture of the skull, and had not shown symptoms sufficient to induce him to apply to a doctor for the original injury. Epilepsy followed, with beginning insanity. That fracture demonstrated the importance of primary trephining in all cases of punctured fracture or fractures due to accentuated violence. A similar distinct process of bone has been pressing on this boy's dura. It will be wise to cut away all depressed bone in this case with the chisel and the gnawing-forceps. Here is found a curious condition: The bone has running directly through it a piece of fibrous tissue attached to the dura mater internally and the soft tissues externally. It is probable that the groove made in the former operation in healing caught some of the pericranium, and thus grasped it in the osseous cicatrix. This tissue is not a part of the dura, for that was not lacerated or incised either by the injury or the first operation. This fibrous partition, however, is attached to the dura, as you perceive, when traction is made on it. Such a condition is conducive to dural irritation leading to epilepsy.

Three things, then, have been found each of which would be sufficient to cause the convulsions, viz., the osteophyte pressing upon the dura, this entanglement of pericranium in the bone-scar, and the supra-orbital

nerves made sensitive by the cicatricial pinching of their branches. The pain in the nerve was, without question, due to the pinching of the pericranium by the gradually closing sides of Dr. Graham's craniectomy. It is remarkable that the opening in the bone should thus be repaired, in such a manner as to bite the soft tissues, as it were. I have taken out the whole area of depressed bone, making an opening across the ferehead about a half-inch wide and about three inches long, and there is no longer pressure on the dura or the brain. The excision of bone is so extensive that there is little probability that the opening will close as it did before. There is now no depressed bone that can give rise to irritation of the dura and be a cause of epilepsy. Hence the boy will be greatly benefited, I believe, and perhaps permanently cured, if treated with bromids, continued for a long time, to break up the convulsive habit. The local physical cause has been removed.

I formerly used threads of catgut for drainage in all of these cases, but recently I have not done so, believing that, if the wound is thoroughly aseptic, the blood-clot will become organized, and there is no danger of suppuration. I am in the habit of closing the wound at once, covering it with iodoform and collodion, and trusting to asepsis and organization of the clot.

When I go out of town to operate I nearly always use capillary drainage. I think it is safer to do so if you have not the patient under your care all of the time. When one operates at home and has his own nurses, he will at once be notified if anything should go wrong. If patients are in the country the after-treatment cannot be followed so closely; and when the nursing is more or less inefficient it is best to use some form of drainage. It is safer for the patient. If you do not put in drainage-threads or a drainage-tube, the wound, however, heals more quickly, because by sealing with gauze, iodoform, and collodion you get immediate union throughout the whole length of the wound. The probability is that in three or four days this patient will be sitting up, and that he will be out of the hospital in two weeks. I put in a few interrupted catgut sutures to bring the parts together, use a few catgut threads for drainage, dust a little iodoform over the wound, and finally apply a large dry dressing. It will be well for us to seal the lower edge of the dressing along the brow with collodion, because it is difficult to keep the edge in contact with the brow by means of bandages without entirely covering his eyes. I thus reinforce the dressing at the lower end, by the application of collodion, to be sure that germs do not gain entrance by the boy trying to see.

NOTE.—The operation-wound healed practically by first intention, though there was a drop or two of purulent secretion about the suture-punctures in the skin. The boy was discharged from the hospital in about three weeks. He had some epileptic seizures after the operation, but they were much less frequent and less severe than for several months before the operation.

BURROWING ABSCESSES OF THE ABDOMINAL WALL AND PELVIS DUE TO ULCERATIVE APPENDICITIS; TREATED BY REMOVAL OF THE APPENDIX AND DRAINAGE.

This young girl, while playing with other children at school last winter, was struck in the right inguinal region with a snowball. She went home, but could not go to school the next day on account of pain, and a physician was finally summoned. The patient continued to have considerable pain, and finally an abscess appeared in the right inguinal region. This was opened by her attendant, but continued to discharge pus, and the girl was brought to the hospital some months later with a discharging sinus at that point, and with the thigh in a flexed position. It was difficult for Dr. Senn to make out whether the case was one of appendicitis that had occurred coincidentally with the injury from the snowball, but unconnected with the injury; or one of appendicitis, due to the blow, going on to suppuration; or one of traumatic hematoma in the tissues of the lower part of the abdomen, which suppurated because of bacterial infection due to proximity to the cecum and vermiform appendix. The abscess was opened, but the appendix was not removed. It is possible, although not probable, that we have here an abscess of a tuberculous nature—that is, a puriform collection arising from tuberculous disease of the vertebræ descending in the sheath of the psoas and iliac muscles.

An interesting point in the case is that when the girl came into the ward the thigh was flexed. That might mislead the surgeon and cause him to think the condition coxitis, or a perinephric abscess, causing spasm of the psoas muscle. It has been said that a good many of the cases of supposed coxitis that recover so rapidly, with perfect motion of the joint, have probably been cases of muscular flexion due to psoas-spasm and the result of a simple perinephric cellulitis. Tuberculous perforation of the acetabulum and the entrance of pus into the cavity of the pelvis might be present and due to progressive coxitis. I do not think that is the case here. Under etherization some weeks ago the leg was readily put in an extended position and kept so for a short time by a gypsum dressing. The flexion was evidently due to the child lying long with the hip bent when the abscess was recent. The deformity is now gone. Near the sinus I feel that within the abdomen there is a hard mass, showing that there is still some inflammatory exudate present. The uterine sound makes one of the nicest probes for entering long sinuses, but it must be used with care. One succeeds better by bending the probe a little at the tip, as it then passes the irregularly tortuous channels better. I shall probe with a good deal of caution. The instrument goes over to the left six or eight inches, and is evidently in the abdominal wall.

Dr. Senn has tried his hydrogen-gas test through the anus, and found no escape of gas, but it is said that injections of fluid thrown into the sinus cause an evacuation of the bowels. I shall enlarge the opening, explore the various tracts, and make provision for thorough drainage. I may accidentally open the peritoneal cavity, but shall try not to do so. If necessary, I shall make an opening posteriorly and establish through-and-through drainage. By cutting down on a grooved director through the hardened tissues of the abdominal wall, I enlarge the opening enough to introduce my finger. I am able to penetrate quite a large cavity, which runs to the left, and feel the intestine as it lies in the abdominal cavity, but separated from my finger. There has been no fecal discharge through this opening; but there is apparent evidence that the opening communicates with the intes-

tine in some indirect way. It is possible that we shall find a small opening leading to some portion of the bowel. Pus has burrowed as far as the median line directly over the bladder, but there is probably no opening into the bladder. There was no evidence of pus in the urine when an examination of the urine was recently made. My finger is now on top of the bladder. The abscess has burrowed over here, and is in the belly-wall in front of the peritoneum, or else the bowel is separated from the cavity of the abscess by an adventitious membrane.

On the left side, where I feel the tip of my finger, I shall make a counter-opening and establish through-and-through drainage. It is necessary to enlarge the wound in order to get more room. We shall establish through-and-through drainage by a tube, after scraping out the cavity and washing away the purulent material. Observe the mass of broken-down granulation-material that escapes from the openings at the two ends of the abscess-pocket. With my finger as a guide, I scrape out the interior of the cavity thoroughly, avoiding the bladder, the position of which I now know, and endeavoring not to break through into the general peritoneal cavity. I feel almost inclined to let well enough alone and not make a search for the appendix, which has probably been the cause of this pathologic condition. If we drain the abscess-cavity thoroughly, it will become shut off from the general peritoneal cavity, and it is possible that the patient will have no further trouble. My incision has exposed coils of intestines near the region of the appendix, but elsewhere the peritoneal cavity is separated from the abscess. This is evidently the cecum that you now see. Notice the characteristic pouched condition which proves the exposed gut to be the large and not the small intestine. One of these longitudinal bands on its wall leads down to the appendix. Here is the base of the appendix. I am now trying to tear the parts loose slowly with my finger, so as to isolate the whole length of the appendix. If I can get to the end of the appendix and find an ulcerative perforation there, we shall have a solution of the case. My finger goes down to a knot of intestine or inflammatory tissue which is tightly adherent to the appendix. There is little doubt that the case is one of appendicitis, with perforation and burrowing of pus. There is a gush of purulent fluid. I shall keep the peritoneal cavity free from this purulent discharge by packing sponges against the intestines. I am working slowly so as not to tear the bowel, near which this abscess is situated. You perceive a fetid odor, and now you see the appendix itself, entirely separated from its adhesions. We have gotten it isolated, but it was difficult to do this without tearing the bowel to which it was adherent. It must be perforated, as it has caused the abscess. I shall tie its mesentery first. I now take the appendix itself and tie it near its base with a silk ligature, and amputate it. Here is the stump of the appendix which I have cut off. I now shove it in so as to invaginate it, and cover it over with peritoneum by sutures of catgut. First I touched the end of the stump with undiluted carbolic acid to disinfect it. Here I show you the perforation in the side of the appendix, which has caused all this mischief. It corresponded with the seat of this abscess and the site of the adhesions and the inflammatory mass about the appendix. Investigation shows that the second abscess-cavity goes down into the true pelvis. I cannot reach the bottom of it. Notice the pus welling up as I take my finger out. I place the patient in the semi-recumbent position so as to throw the pus away from the general peritoneal cavity. We shall protect the peritoneal cavity from infection by gauze packing, and leave the wound open, after thoroughly washing out the cavity with sterilized water. I would like to scrape it if I could, but this would be a somewhat difficult thing to do. I might do harm by making an opening into the vagina or bladder. This second abscess has burrowed down into the pouch of peritoneum between the rectum and the uterus. It is probable that the desire to go to stool, when fluid was forced into the sinus, was due to pressure on the rectum by filling this abscess-pocket with the fluid introduced.

I now simply pack the wound with gauze to keep it open, pass a drainage-tube through the abscess in the belly wall, and apply the ordinary dry dressing. To-morrow the intestines will be shut off from the external wound by plastic exudate. The gauze will then be removed, and a large drainage-tube passed down into the pelvis following the second abscess-pocket opened to-day. If the temperature rises, this tube will be used as a means of flushing the cavity daily with weak antiseptic solutions. It may be necessary to make a counter-opening into the vagina. I hope not.

NOTE.—The patient did well, and some weeks afterward was reported as convalescing nicely.

CLINICAL MEMORANDA.

A CASE OF ACCIDENTAL HEMORRHAGE IN THE FIRST STAGE OF LABOR AT FULL TERM.

BY HENRY H. SMITH, M.D.,
OF RAYTOWN, MO.

As there is some variance among authors as to the symptoms and treatment of the infrequent condition of accidental hemorrhage in the first stage of labor, I report the following case:

On September 11th, I was urgently called to Mrs. R., a robust woman, aged forty-two, in her fourteenth pregnancy, at full term. I found her in a state of collapse, pulseless at the wrist, the extremities icy cold, with great anxiety and restlessness, complaining of blindness and of continuous pain in the lower abdomen. A hasty examination revealed evidence of only slight external hemorrhage, a dilatable os, and a vertex-presentation with the membranes intact. Blood of a dark color and syrupy consistency, giving the characteristic odor of old blood-clots, clung to the examining finger. The womb was greatly distended and bulging into the abdomen; it was rather tense, but still imparted to the hand an inelastic, boggy feel. There were no movements or other signs of life of the fetus.

I at once informed the nurse that the patient was in a very critical state, and called for assistance. My efforts were directed toward reviving the patient. I lowered the head, applied heat to the extremities, and gave hypodermatically spirit of camphor, morphin and atropin, nitro-glycerin, and alcohol, very freely. In twenty minutes I was rewarded by a return of the pulse at the wrist, and in an hour and a half reaction was well established. I adhered to a rule I have always followed in labor, and

gave no ergot until the womb was emptied. The question confronted me from the beginning, whether I should delay or attempt immediate delivery. In the collapsed condition of the patient I believed that the slightest additional hemorrhage meant a disastrous end. Further on, when she had rallied, there were no labor-pains, and consequently there was no promise of contraction and retraction of the womb after delivery. Guided only by the condition before me, I determined to temporize and await developments. The pains in the lower abdomen and lumbar region grew worse and continued without intermission. About three hours after I first saw the patient the physician I had sent for arrived, and after emptying the bladder at his suggestion, we ruptured the membranes and thus brought on feeble labor-pains. The parturient canal was roomy and advancement was due mainly to the expulsive efforts of the mother, rather than to the weak contractions of the uterus. Compression was used over the fundus. In three-quarters of an hour a lifeless child was born, and energetic efforts failed to resuscitate it. The placenta was at once taken away, followed by a basinful of clotted blood. The placental site seemed to have been at the fundus, though the placenta was wholly detached when removed. The wound contracted well, we administered a couple of doses of ergot, and the woman proceeded to a good recovery.

Two weeks before confinement the patient had had a violent fall on the buttocks, which was followed several times, at intervals of a few days, by what she termed "sinking spells"—symptoms of internal hemorrhage—occurring usually at night while she was in bed. Traumatism is considered the most fruitful source of accidental hemorrhage before labor, but in a paper by Dr. Coe, of New York, read before the American Gynecological Society, in 1891, he stated that traumatic injury was the more infrequent origin of hemorrhage during full-term labor, which is the more fatal form.

The readiness with which the circulation regained its volume led me to believe that the collapsed condition was not wholly due to exhaustion from loss of blood, though the hemorrhage was great, as was shown by the débris finally discharged from the womb; it was doubtless in part produced by shock incident to the sudden and extreme over-distention of the uterus. I attributed the absence of labor-pains to loss of contractile power, caused by the abnormal stretching of the uterine muscular fibers.

CHANGES IN REFRACTION AFTER CATARACT-EXTRACTION.

BY CHARLES W. KOLLOCK, M.D.,
OF CHARLESTON, S. C.

ON the 5th of last June I removed a cataract from the left eye of Mr. Y. He was not a strong man, as he suffered considerably at times from indigestion and bleeding piles.

An iridectomy was performed, and the operation was finished without any mishap, except the lodging of a piece of cortical matter in the upper pupillary space. A few careful attempts were made to expel it, when it was seen that the vitreous was protruding, which caused displacement of the edges of the incision. The subsequent healing was slow, but continued without any further complication. The cornea at the incision was somewhat bulged, but the shape gradually improved, so that after the secondary operation had been performed, vision with + 10 D. was 15/70. Twelve days later, with +11+ 2.cyl. ax. 180°, vision was 15/40 and 15/xxx (?). Nearly two months later he came, saying the glasses did not suit. He was again tested, and refused all cylinders; but with +14 D. vision was 20/20 (?), and he read small pica with +16 D. The 14 D. lens was not only best for twenty feet, but for infinite distances.

This case is interesting on account of the various changes that occurred in the corneal surface, which was, of course, more irregular at first from the lack of coaptation of the edges of the incision, but the gradual increase of the strength of the lens to such a degree is unusual.

I have thought that the report of this case would be of interest to those who heard and took part in the discussion of Dr. Jackson's paper in the Ophthalmological Section of the Pan-American Medical Congress.

NEW INSTRUMENT.

AN ESOPHAGEAL STETHOSCOPE: WITH REMARKS ON INTRA-THORACIC AUSCULTATION.[1]

BY SOLOMON SOLIS-COHEN, M.D.,
PROFESSOR OF THERAPEUTICS AND CLINICAL MEDICINE IN THE PHILADELPHIA POLYCLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL, ETC.

THE instrument that I have here is a modification of one suggested by Sir Benjamin Ward Richardson. In the course of that observer's examination of a case of suspected stricture of the esophagus, in which no obstruction was shown by the "water-gurgle" test, and he had concluded to pass the stomach-tube, it occurred to him that, perhaps, if he attached the terminal of his double stethoscope to the stomach-tube he might notice the presence of friction as the tube passed over the stricture, or the absence of friction and of stricture; in this particular case he found no friction and determined that there was no stricture. It then occurred to him that in many cases it might be useful to employ a similar apparatus in listening to the sounds of the heart and possible murmurs in the vessels, as in cases of aneurism, unmodified by transmission through the chest-wall, and that possibly he might be able to hear the sounds of the lungs in the same manner. He also thought that certain sounds generated in the stomach might give information as to the manner in which the gastric functions were being carried on; while the sounds of the abdominal aorta could be heard through the stomach, unmodified by the pressure that on external auscultation is so often a cause of doubt in interpreting the causation of murmurs.

In attempting to repeat Dr. Richardson's observations, I found that there was occasional danger of the regurgitation of fluid through the tube into the ear-pieces. To obviate this objection I have introduced between the stomach-tube and the ear-tube a rubber capsule contain-

[1] Presented to the College of Physicians of Philadelphia, November 1, 1893.

ing a diaphragm of gold-beater's skin, which serves as a barrier and as a resonator. The capsule can be readily taken apart and cleansed, and new diaphragms can be inserted when needed. I exhibit the improved instrument, as skilfully made for me by Messrs. Tiemann & Co., of New York.

The esophageal tube is of soft rubber, No. 27 of the French scale, having a lateral eye near the blunt tip. On the same side as the eye, beginning five inches therefrom and extending up to a distance of nineteen inches, is a series of indentations, one inch apart, which show how far the eye of the instrument is from the patient's teeth. By experiments made outside of the body I have found that the sound heard is transmitted from within a radius of an inch and a half or two inches from the opening in the tube, the sound being most distinct when the eye is in close apposition to the source of sound. I have used the instrument to listen to the sounds of the heart only, not wishing to risk the passage of the tube in cases of thoracic aneurism and not being able to hear through it the lung-sounds.

The most striking difference between the sounds of the heart as heard in the ordinary way and the same sounds as heard through this instrument is the almost uniform quality of the first and second sounds—that is, the sharpness of the second sound, as heard by the ordinary method, is wanting in auscultation by this method. The rhythm is of course the same; the second sound is the shorter, and the pause is easily appreciated. It is possible to separate the two sounds and hear the first sound alone, or the second sound alone, or to hear both. At a distance of from eight to nine inches from the teeth, only the second sound is heard; at ten or eleven inches, both sounds are clearly heard; and at thirteen or fourteen inches only the first sound with, perhaps, an ill-defined second sound. I have not satisfied myself as to my ability to differentiate between the aortic and pulmonary sounds by varying the position of the eye of the tube.

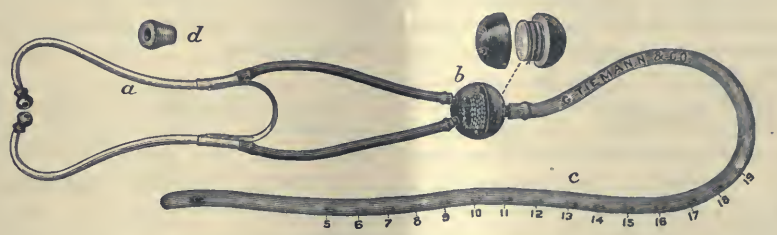
My largest number of observations have been made on persons with healthy hearts, who were under treatment for stomach-troubles, and thus accustomed to passage of the esophageal tube; but I have been able to use the instrument on other patients, with and without cardiac disease; among them two cases in which by the ordinary method of examination I had diagnosticated the existence of mitral obstruction. In one of these two cases mitral obstruction alone was diagnosticated by the ordinary methods of physical examination; and in the other, mitral obstruction and regurgitation. In both cases I failed in each of two examinations to hear the obstructive murmur through the esophageal stethoscope. The regurgitant murmur was heard distinctly, but I could not make out that any part of it was presystolic. I do not know whether there is an acoustic reason for this, or whether it was due to lack of skill with the instrument. I have no doubt of the correctness of the diagnosis.

I have also used the method in one case in which there was doubt as to the coexistence of aortic diastolic and aortic systolic murmurs, but the apparent murmur of regurgitation was not heard through the esophageal stethoscope, whilst the systolic murmur was heard distinctly, and a good closure-sound was heard. This, I think, warranted affirmation of arterial roughening rather than valvular lesion.

While speaking of the use of the tube to clear up the doubt in cases of suspected aneurism, Sir B. W. Richardson remarks that the good sense of the physician must determine whether or not in given instances the method is dangerous, and not to be used.

As to the importance of intra-thoracic auscultation, I cannot as yet speak positively. I do not know how far it will be applicable in cases of doubtful diagnosis—in others it is not needed—or what its exact limitations are. I consider it, however, one of the methods that we may usefully employ among others in making exact observations, and for this reason I have brought the subject before the College for discussion, in the hope that other Fellows may be led to study it.

It is only right to say that two other communications on the subject of intra-thoracic auscultation, one by a German observer, the other by two English observers, have appeared since Dr. Richardson's publication, and apparently as independent studies. Their conclusions are not cited here, as the subject still requires individual and unbiased work.



Esophageal Stethoscope.

a. Metallic conducting-tubes of "Albion" stethoscope. *b*. Capsule with diaphragm. *c*. Esophageal tube with indented scale. *d*. Soft rubber caps for ear-pieces.

MEDICAL PROGRESS.

Disease of the Corpora Quadrigemina.—At a recent meeting of the Clinical Society of London, TAYLOR (*Medical Press and Circular*, No. 2845, p. 500) reported the case of a boy, four years old, who four months before coming under observation became ill, would not eat, and presented drooping of the eyelids, followed by gradual loss of strength. For two weeks there had been staggering, the incoördination being increased at the same time as the drooping of the eyelids was worse. The child appeared to be somewhat drowsy and spoke slowly; his gait was markedly ataxic, the feet being thrown forward and suddenly brought down, heels first;

on trying to stand he oscillated forward and backward. He could not touch the tip of his nose with the tip of his forefinger, nor bring the tips of the fingers of the two hands accurately together. The head and neck also oscillated in an antero-posterior direction. There was nearly complete double ophthalmoplegia, including double ptosis, more marked upon the right, and paralysis on both sides of the superior, inferior, and internal recti, and, so far as could be determined, of the superior and inferior oblique. There was some lateral nystagmus. The pupils were slightly and unequally dilated, and reacted to light. There was no optic neuritis and no choroiditis. The child could not see, but no accurate record was made of the powers of vision. After the lapse of a month the child became semi-conscious, swallowing with difficulty, and the arms and legs fell flaccid when lifted from the bed. Loss of consciousness became more profound, the breathing assumed a Cheyne-Stokes character, swallowing became difficult and finally impossible, and death ultimately took place six months after the appearance of the first symptoms. Upon post-mortem examination the cerebellum was found to be perfectly healthy, but the corpora quadrigemina were flattened, broader, and more extensive than normal, and gray and gelatinous in appearance. There was a similar gray substance at the base of the brain, between the crura cerebri and invading them in their inner halves; the third nerves were lost or torn away from their attachments. In the right orbit all of the muscles supplied by the third nerve were atrophied, and the nerve and its branches could not be found. In the left orbit the nerve and its branches were present and the muscles were fairly healthy. The minute investigation of the parts was unsatisfactory, from failure in the preserving methods, but there was no doubt that the corpora quadrigemina and adjacent parts were changed by new growth, probably of a glio-sarcomatous nature.

Epilepsia tarda is the designation that MENDEL (*Deutsche medicin. Wochenschr.*, 1893, No. 45, p. 1108) would apply to epilepsy that appears after the fortieth year of life. From a statistical analysis he has found that the condition is both relatively and absolutely more common among males than among females. Hereditary predisposition plays an important etiologic rôle in this form, as in other forms of epilepsy. The course of epilepsia tarda is in general milder and comparatively less progressive than that of the ordinary form of epilepsy, and the mental condition suffers less, even after prolonged existence of the condition.

Temporary Aphasia following Contusion of the Left Side of the Head.—GAUDOIN (*Indian Medical Record*, vol. v, No. 7, p. 222) has recorded the case of a girl, ten years old, who came under observation in an unconscious condition, and presenting a contusion of the left side of the head, the result of a blow. On the following morning a hematoma about the size of a walnut was found at the site of injury above the left ear. The patient had recovered consciousness, but there was total aphasia. The child answered questions and made known her wants by intelligent signs. In the course of time, however, steady improvement took place, the tumor gradually disappearing and speech returning.

THERAPEUTIC NOTES.

The Treatment of Chronic Gastric Catarrh.—As the result of a thoughtful study of the measured effects of certain therapeutic agents, including lavage, hydrochloric acid, and intra-gastric faradization and galvanization upon the secretory and motor functions of the stomach in cases of chronic catarrh (glandular gastritis), STEWART (*Therapeutic Gazette*, November 15, 1893, p. 744) comes to the conclusion that in the treatment of this condition lavage is of service as a cleanser of the mucosa and as a stimulant to the most important of the gastric functions—the secretory and motor; although for all purposes but the last lavage is decidedly inferior as a remedial agent to the intra-gastric application of electricity. Hydrochloric acid, administered even in full doses, after meals, is of less value as a stimulant to the secretion of the hydrochloric acid of the stomach than as a digestant; even in this capacity it may be of little utility in the total absence of hydrochloric acid from the gastric secretion. Under such circumstances benefit may be derived from its employment in large doses in combination with pepsin. Of the various agents employed in the treatment of gastric catarrh, by virtue of their influence upon the secretion and motility of the stomach, none is comparable with the intelligent daily use of intra-gastric faradism and galvanism.

Loretin—a Substitute for Iodoform.—SCHINZINGER (*Centralblatt für Chirurgie*, 1893, No. 45, p. 984) reports the employment, with satisfaction, in a considerable number of operations, of loretin as a substitute for iodoform. Chemically, the preparation is meta-iodo-orthochinolin-sulfonic acid, and it is claimed that it lacks the disagreeable odor and the toxic properties of iodoform. The body is a yellow, crystalline powder, in appearance suggestive of iodoform, but entirely without odor. It is but slightly soluble in water and in alcohol and practically insoluble in ether and in oils, although with the latter it forms emulsions, and particularly with collodion. As a sulfonic acid, loretin forms metallic oxids; of these the alkaline salts are soluble in water with the production of an orange-red color. A solution of the sodium salt of from 2 to 5 per cent. commends itself for purposes of irrigation or topical application. Careful investigation demonstrated the innocuousness of the preparation and the absence of renal irritation after its use. The drug is also free from irritating action upon the skin. Gauze impregnated with loretin has been employed when indicated.

Benzol for Influenza.—ROBERTSON (*Lancet*, No. 3663, p. 186) relates that he has treated a number of cases of influenza with benzol, with the best results. The drug was administered in doses of five minims every two hours and a half, in the form of an emulsion, in lemonade. As a rule, in about two hours after the first dose the general discomfort had disappeared, and within the first twenty-four hours the temperature was observed to be normal. Convalescence was usually rapid and followed by very little debility. Correspondingly good results were observed in cases of whooping-cough treated with benzol.

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SATURDAY, DECEMBER 16, 1893.

THE TREATMENT OF TYPHOID FEVER WITH INJECTIONS OF DEAD BACTERIAL CULTURES.

How many "specific remedies" have been recommended in the treatment of typhoid fever we should be afraid to say. A long series of intestinal antiseptics has been tried, but each of them in turn has been abandoned. At the moment the general opinion seems to be that where it is practicable, as in large hospitals, the cold-bath supplemented by purely symptomatic treatment, gives the best results. But even by this method not much has been gained beyond an amelioration of the general symptoms, and, perhaps, a moderate lowering of the death-rate. The duration of the disease has not been shortened, and it has even been claimed that relapses are more frequent than when the cold baths are not employed.

It is evident, however, that we are not to fail in the therapy of typhoid fever for want of trying, and already another system of treatment has been suggested, and this time from an entirely new, although, perhaps, not an unexpected, quarter. It will be remembered that last year BRIEGER, KITASATO, and WASSERMANN[1] claimed that by growing typhoid bacilli in bouillon made from the thymus of the calf (method of WOOLDRIDGE), a culture free from toxic properties could be obtained. In order to completely annul the toxicity and to kill the bacteria it was found necessary to heat the cultures to 60° C. Starting with this fact, EUGEN FRAENKEL,[1] with the assistance of MANCHOT, has prepared such a sterile liquid and has used it in the treatment of some fifty-seven cases of typhoid fever. The mixture was given by hypodermatic injection, preferably deeply into the muscles of the buttock; in no instance did any untoward local effects follow.

The injections were begun with 0.5 c.cm. of the sterile liquid—a dose which appeared to be quite harmless, even for children. As a rule, this had no visible effect, and on the following day 1.0 c.cm. was injected into the opposite buttock. This dose, unlike the first, gave rise, in the majority of cases, to a marked elevation of the temperature, sometimes accompanied by chilly sensations. On the following day the temperature-curve generally showed a decided fall, which was only temporary in the cases in which the injections were then discontinued. FRAENKEL'S rule was to give an injection every other day, increasing the dose about 1 c.cm. each time. The continuous fever disappeared, and the charts showed marked remissions in the temperature; the intensity of the constitutional symptoms diminished, and complete apyrexia followed in a very few days. With the fall in temperature the activity of the skin was restored, free diuresis was reëstablished, the diarrhea disappeared, and the patient, with an enlarged spleen, and perhaps copious crops of rose-spots, entered into convalescence and soon began to gain in weight. Twelve of these cases were of a grave type; the remaining forty-five were of average severity.

In an equally important communication appearing at the same time, RUMPF[2] reports the results of the treatment of thirty cases of typhoid fever with dead cultures of the bacillus pyocyaneus. Encouraged by the results of FRAENKEL, and stimulated by certain suggestions of BUCHNER,[3] he undertook these experiments in order to ascertain whether or not those general vital processes which, at the

1 "Ueber Immunität und Giftfestigung," Zeitschr. für Hygiene u. Infectionskr., 1892, Bd. xii, p. 137.

1 "Ueber specifische Behandlung des Abdominaltyphus," Deutsche medicinische Wochenschrift, 1893, No. 41, p. 985.

2 "Die Behandlung des Typhus abdominalis mit abgetödteten Culturen des Bacillus pyocyaneus," Deutsche medicinische Wochenschrift, 1893, No. 41, p. 987.

3 "Ueber Bacteriengifte und Gegengifte," Münchener medicinische Wochenschrift, 1893, No. 24.

onset of an affection, are called into play to inhibit the progress of the disease, and to protect the organism against its evil effects, could not be developed and strengthened by the introduction into the body of dead bacteria of kinds other than that setting up the infection. In his first experiments he used dead cultures of the streptococcus pyogenes, but these having no favorable effect he next prepared cultures of the bacillus pyocyaneus in thymus-bouillon, just as FRAENKEL had done with typhoid-bacilli. The action of this "pyocyaneus-bouillon" on the patients was, on the whole, quite as favorable as that observed in the cases treated by FRAENKEL with "typhoid-bouillon." The temperature-curve soon assumed a remittent type, the somnolence and delirium gave way, the functions of the skin and kidneys were restored—all without any appreciable embarrassment of the respiration or circulation.

FRAENKEL and RUMPF claim, and they have had ample opportunity for observation in the large general hospital at Hamburg, that never in their experience with different methods of treating typhoid fever have they before seen such results as were obtained in these cases. In from six to eight days the fever for the most part, and all of the severe phenomena of the disease, had disappeared. The convalescence was prompt, and, as a rule, pursued an uninterrupted course. In cases in which relapses occurred these yielded speedily on the renewal of the injections. All of FRAENKEL'S cases, we think, recovered; of RUMPF'S thirty cases two died—one of intestinal hemorrhage and one of pneumonia. The latter is quite conservative in the matter, being content to leave to many further trials the decision as to the ultimate value of this method of treatment, emphasizing, however, the point which he regards as the most important outcome of the investigation, viz., "that it has now been established that a disease in human beings can be influenced by products of microörganisms wholly different from those which cause the disease."

BUCHNER,[1] in commenting upon this work, expresses his satisfaction with the results, especially with the conclusions of RUMPF, and points out the analogy between FRAENKEL'S work and the treatment of tuberculosis with tuberculin. From a bacteriologic standpoint, typhoid fever has to be looked upon as a fight of several weeks' duration between the animal organism and the typhoid-bacilli in the intestine, mesenteric glands and other organs. On the part of the human body the war is carried on with the aid of an inflammatory (and febrile) reaction, an attempt being made, either through the activity of the leukocytes (?) or through germicidal substances newly formed in the tissues (of the nature of which we are as yet ignorant), to bring about the destruction of the invading bacilli. BUCHNER therefore views the aim of these bacterial injections which we have just described as an effort to render this "curative reaction" more intense and thus more effectual, exactly as was that of the treatment of tuberculosis with tuberculin. Here we have nothing to do with antitoxic influences, or with the production of immunity, nor have these effects (as RUMPF has pointed out) essentially anything to do with "specificity" any more than have those of the tuberculin-reaction, as was shown for the latter two years ago by the fact that it can be set up by the products of bacteria other than tubercle-bacilli. The seat of reaction is, however, determined by the localization of the lesions of the specific disease, apparently because there the tissue-elements are already in an abnormal state of excitation, and can all the more easily be aroused to a still greater activity. Very different substances are capable of calling forth the reaction. We already know that the protein-substances contained in the bodies of different kinds of bacteria can give rise to it, and it is probable that other substances which cause a leukocytosis or a local inflammation can serve the same purpose. It will be necessary, as BUCHNER says, to determine how much, if any, of the effect produced by these injections of FRAENKEL and RUMPF is directly dependent on the extract of thymus which is employed in the preparation of the bouillon, for experiment has shown that the extract exercises almost as powerful a positive chemotactic influence as do the bacterial proteins themselves.

The disastrous consequences of the general rush after tuberculin will, we feel sure, tend to dampen any undue enthusiasm concerning this new departure in the treatment of typhoid fever. We shall this time be willing to await the results of the control-experiments which will undoubtedly soon be inaugurated by investigators in large hospitals, where the preparation by competent bacteriologists of a reliable fluid for injection can be assured. Should the treatment prove to be of value, it is more than likely that, as with tuberculin, many modifications and chemical refinements will have to be worked out

[1] Münchener medicinische Wochenschrift, 1893, No. 43.

before it will be safe to recommend its general employment. In any case, these researches are of the widest interest, and we shall watch attentively for further developments in a similar direction.

PHYSICAL TRAINING VS. ATHLETICISM.

ANTHROPOMETRY and experimental psychology are comparatively new comers among the sciences. The attempt to secure relatively accurate standards of measurement for physical and mental capacities is practically a matter of the last fifteen years, but the new sciences have come to stay, and accurately observed and carefully recorded facts already at hand are sufficiently striking and comprehensive to demand the attention of all those interested in the physical and intellectual improvement of the race. Anthropometry as developed under the system known as *Bertillonage*, established by M. ALPHONSE BERTILLON, has rendered the differential diagnosis of the various physical types of defectives and delinquents as precise as that employed by the medical specialist in the various other fields of human abnormality. Workers such as WUNDT, GALTON, CATTELL, and JASTROW, have furnished us with a basis for the estimation of the departure from or approximation to the mental and nervous *norm* as easy of application and as intelligible to the trained observer as are the readings of the hydrometer, barometer, or other means for estimating relative physical states. Statistics cited by MACDONALD, in his recent essays on Abnormal Man, point to the conclusion that school and college education *per se* has little influence in decreasing crime, insanity, suicide, or other acts based upon perverted mental and physical states, but to the contrary, that crime, university education, and alcoholism manifest a large and corresponding increase.

PROFESSOR JOSIAH ROYCE, of Harvard, in his articles in the *Educational Review*, points out how great a region childhood is for the sprouting and first springing up of the young weeds of future mental disorder, while E. M. HARTWELL, Director of Physical Training in Johns Hopkins University, proposes the term *cachexia scholastica* for the irritable, easily over-wrought, and unsteady nervous system, arrested development and enfeebled powers of assimilation so frequently met with among our young people from ten to thirty years of age. The only inference to be drawn from the startling array of testimony before us as to the inadequacy of mere intellectual education to avert human degeneracy, and from the direct bearing the existing system of instruction has in lowering the healthy or entrophic average, is that more attention must be paid to the building up of a race of men and women sound in body and mind, although perhaps not so precocious intellectually.

We often hear it said that this is the day of young men, and so it seems to be; but what a grotesque and absurd resemblance the average middle-class young man holds to the ideal youth! The measurements of over 15,000 young men show that the youth of London average all of three and a half inches shorter, and eighteen pounds less in weight, than the normally well developed type of the same age. The examiners for admission to West Point find a majority of the applicants unfit physically, and sometimes not one comes up to the standard of an able-bodied soldier.

We may well stop and ask those directing the education of the people what they are providing in the way of physical training toward the development of men and women whose prolonged and healthful lives shall render their increased acuteness of perception a source of personal and public comfort rather than a source of pain, premature old age, and all the evils resulting from physical depression.

The public has been deluded into accepting a false athleticism in place of scientific physical training. Only two or three of our universities have directors of physical training capable of bringing to bear the resources of the physician, the psycho-physicist, and the anthropometric expert. In the majority of instances the physical training of the student is ignored, or placed in charge of a retired sparring-master, rowing-coach, or ex-professional base-ball champion. The great mass of our boys and girls—of whom there are some fifteen millions, more or less, in actual school attendance, averaging, as BLAKIE estimates, forty pupils to each teacher in the land—these boys and girls are being practically neglected physically while being crammed mentally. In the meantime, the fact that over 60 per cent. of our population dwell in cities—an increase of 40 per cent. in the last century—shows that our stock of hardy country lads and lasses, from which to draw men of brawn and women of sound nerves, is rapidly lessening. If the tide of humanity cannot be turned out over the fields, then let us have some intelligent effort

on the part of Boards of Education and College Trustees to provide for the proper conservation of physical energy in our city children rather than the foolish encouragement of a popular fad for so-called athletics, based upon the same instinct that controls the gambler, the pugilist, and the *habitué* of the race-course. Place the physical training in the hands of scientifically qualified directors, allow the exercises to be based upon the needs of the student rather than upon the necessity of putting out a strong base-ball nine or foot-ball team. Do away with some of the present studies, and give at least half an hour a day to properly directed physical exercise. Increase the number of gymnasiums, make the fees nominal, have a personal record kept of each boy and girl, and see that the prescribed exercise is not evaded. An excellent aid in this respect consists in stitching colored worsted to the gymnasium suits over the parts requiring development, thus enabling the attendant to see that each pupil is performing only the required exercise, and inciting the pupil to a real endeavor to get rid of a mark indicating his or her weak point. Let the Directors of Physical Training hold annual conventions, to harmonize and systematize their work. The necessity of scientific physical training is a real one throughout our entire land, and physicians and parents should see to it that the young people for whose healthy development they are responsible should not be deluded and injured by the present semi-professional athleticism which has taken the place of real physical culture in most of our educational institutions, and the influence of which is felt even in the primary schools.

THE FIRST STATE HOSPITAL FOR EPILEPTICS.

THANKSGIVING-DAY was observed with peculiar appropriateness in the little town of Gallipolis, in the southern part of Ohio, for the day marked the opening of the State Hospital for Epileptics, the first of its kind in this country, we believe. We are aware that steps have been taken in Massachusetts, in New York, and in Pennsylvania, looking to the establishment of similar institutions, but, to the best of our knowledge, the hopes of the advocates of such a humane measure have yet to be realized. It would be difficult indeed to conceive of a greater blessing, of a nobler charity, of a truer philanthropy, than the provision of a home and, what is really more important, of healthful and remunerative occupation for a class of the community, the members of which are not so ill as to be unable to lead useful lives, but whose unfortunate condition renders them but temporarily and periodically incapacitated for work, and who thus cannot compete with others; while at the same time they are kept under medical care and observation. In this way these unfortunates are made to yield the greatest degree of usefulness of which they are capable, while they also receive the most scientific and the most humane treatment that can be accorded them. At Gallipolis five cottages have been completed with immediate accommodations for 250 male patients. It is hoped to have four additional cottages ready in the spring, for the reception of 200 female patients. There are, besides, dining-halls, boiler-rooms, and a farm of ten acres. The cottages are two stories high, are built of sandstone, are fireproof, accommodate 50 patients, and cost about $15,000 each. The site is an admirable one in all respects. It is expected at a future date that a second institution will be established in the northern part of the State. Common dining-rooms, except for the sick or infirm, have been provided, from economic motives. The patients will be given useful occupation to the extent that their health will permit. It is proposed to employ most of them during the summer months in truck-farming. It is estimated that the cost per capita will not exceed half that in the State hospitals for the insane. The State of Ohio has set an example that every other State in the United States should speedily follow. There can be no better way of *investing* public moneys.

EDITORIAL COMMENTS.

The Immortal Reading-Notice.—The extent to which the practice of the journalistic disgrace of the sneak reading-notice is carried cannot be known except by editors who look over one or two hundred different journals each week, and thus are enabled to see the same sly, shrewd, compound of lies reprinted *verbatim* as original editorial matter in scores of "medical" serials one after another. The chances are greatly against the ordinary reader, the bamboozled subscriber, or the non-subscribing receiver, knowing that this is fraudulent advice or news, and that it is appearing in many other journals in exactly the same way and in precisely the same words. He only takes one or two such local and venal periodicals, and the deception thus passes unrecognized, until some disgusted editor rails against it. Of late a particularly nauseating mess about "substitution" and the dishonest druggist is made to appear editorially in numberless medical journals, and

the whole end and aim of the rigmarole is a laudation of several proprietary and secret nostrums. Advertiser and editor are sharp enough to change the title in each periodical, but that is all the change except the bribe-money. "A Too Common Affront to the Profession," "Dishonest Druggists," "The Evils of Substitution," and other such are the hypocritic titles of the more hypocritic "ads." In a month or two a new stereotyped form will appear and run its course in the usual manner. We are thinking of making a list of these advertisers and of their slavish journals, and of putting them all in the pillory of publicity. The medical profession should know about these things. The practice is proof positive of the worthlessness of the nostrum thus advertised, the immorality of the advertiser, and the combined worthlessness and immorality of the journal thus prostituting itself.

An Argument for Human Vivisection.—A writer in a Western journal makes a vigorous plea that criminals condemned to death should be first used for vivisection purposes, and especially in the study of cerebral localization and function. One argument adduced is exquisitely humorous, the humor being heightened by the innocent unconsciousness of the quality. The earnest writer thus argues:

Those who would be unfavorably impressed with this method of investigation should take kindly to the information that experiments of this kind on the brain are no more unpleasant to the subject than like impressions aroused during the sojourn of perfect liberty. There is every reason to believe that the stimulus in a large number of instances would be highly pleasing. If, for example, our subject experimented upon was a person who had been repeatedly animated by the ludicrous, upon touching the seat of such impressions the whole circumstance would be reproduced, attended with the same vivacity as the original experience. Painful sensations would not be reproduced unless a certain nucleus of cells was stimulated, and this could be avoided after its exact location was ascertained. To secure coöperation and carry out the operation successfully the condemned would be instructed with the nature of the work.

The childlike conviction that "the ludicrous" and that "pain" have definitely localizable centers, and that all one would have to do in order to spend a life in laughter would be to tickle the ludicrous-center with a galvanic needle is itself one of the most painfully ludicrous conceptions of pseudo-science that we have ever met.

Metabolic Changes following Thyroid Therapy.—We have as yet no adequate knowledge of the processes that take place as a sequence of the administration of preparations of the thyroid gland in the treatment of myxedema. It has been observed in these cases that there occur pronounced metabolic changes, as manifested by elevation of temperature, loss of weight, and increased elimination of urine, as well as of its nitrogenous, phosphorous, and chlorinous elements. VERMEHREN (*Deutsche medicinische Wochenschrift*, 1893, No. 43, p. 1037), of Copenhagen, details the results of some interesting comparative observations, in which he found that in two of three young persons unaffected with myxedema, only increased diuresis followed thyroid treatment; while senile individuals thus treated displayed especially increased nitrogenous metabolism, elevation of temperature, acceleration of pulse, and increased diuresis, comparable to these phenomena as observed in cases of myxedema treated similarly. The inference is that the changes that take place in the myxedematous patient under the influence of thyroid administration likewise occur in old persons subjected to the same treatment. It is further pointed out that this similarity of reaction may be ascribed to changes in the thyroid gland—on the one hand a physiologic obsolescence, and on the other a pathologic atrophy.

Public Health vs. the Law.—In the last *Monthly Bulletin* of the State Board of Health of Iowa we notice a significant opinion from the Attorney-General in relation to the powers of the Board. It appears that the Birmingham local Board of Health condemned as unsanitary the Birmingham School-house and its site, and requested the State Board to investigate their condition. This was done by the civil engineer of the Board, and he pronounced both the building and the site unsanitary and dangerous. Nevertheless, the school-officers proposed to repair the building, and in this connection the attorney gave it as his official opinion that the State Board of Health had *not* the power to prevent this action on the part of the school-authorities.

The opinion is in these words: "The State Board of Health has not the power to make an order requiring a particular school-house to be closed because inimical to the health of children using it."

This is another instance of the absurd, technical ruling of our legal authorities, who consider that the people and their children are made for the law and the courts, and not the law and the courts for the people and their children.

The Solar Cautery as a Remedial Agency.—In the *Pacific Medical Journal*, Dr. A. V. Thayer writes eulogistically of the method of cauterization by means of solar heat. The *Scientific American* says that the method was first suggested by Augustus Barnes, of Southington, Conn., and was patented (we are thankful the man had no medical-title tail to his name!) by him May 28, 1867. One wonders why this method of the destruction of tissues is more agreeable than others in use, but we are assured that it is so. In sunny California the method might be applicable, but what would the surgeons in London, with months of absent sunshine, have to do and to say about it? Perhaps Dr. Thayer would advise sending the patients to California's hospitable shores! Here is a suggestion to the medical philosopher as to the influences of climate on medical and surgical progress. If a great truth, a real discovery, what a change in our office-customs! All surgeons would have to locate their offices as do the photographers, in the glass-roofed upper stories, and all hospitals would have to be much remodelled. In Chicago, with its twenty-two story buildings, this would be a "burning question" indeed.

Bloodless Amputation at the Hip-joint.—In view of the admirable results obtained at the hands of some twenty-five different operators from the employment of the method devised by DR. JOHN A. WYETH, of New York, for the control of hemorrhage in the performance of

amputation at the knee-joint, there would seem to be little to add to the eloquent statistics presented in the article by Dr. Wyeth that appeared in THE NEWS of last week. A procedure that has reduced the mortality of a given operation from 64 per cent. to 22 per cent. is surely deserving of an honorable and a permanent place in the history of practical surgery. The good results to be credited to Wyeth's method are to be found not only in the absolute saving of life in the cases in which operation is undertaken, but also in the indirect saving, in consequence of the performance of operations in cases in which otherwise a fatal result would passively be permitted to take place. American surgery has much to be proud of, and the device of Wyeth will gain it fresh laurels. The procedure must be considered a distinct advance and worthy of more general and extended application.

"*Gasocution.*"—Could anything be more execrable as a word-coinage?—and yet both the word and the thing are seriously proposed. The inquiring reader may guess that the proposal is to execute criminals by gas-asphyxiation instead of by the present methods. In view of the astonishing increase of suicide, would it not be well to consider the possibility of the influence of "gasocuting" and euthanasia generally upon public morals and crime? But there is too much "gaselocution" in the proposition to be very serious about it.

SELECTIONS.

THE POSSIBILITIES AND USES OF ORGANIC EXTRACTS.

BETWEEN such organs as, for example, the brain and the thyroid gland, there are many and great differences. One of these differences is all-important for the present discussion. The thyroid gland is a secretory organ; the brain is not. Without entering into a discussion of the exact nature of the process, concerning which the evidence is not clear, it is sufficient to know that clinical and experimental observations are at one in demonstrating that the thyroid gland manufactures some substance which, by its function in the economy, prevents the occurrence of the symptom-complex termed myxedema or cachexia strumipriva.

The principle is exactly the same as that upon which we administer pepsin or pancreatin to replace the natural pepsin or pancreatin in digestive disorders; the body failing to furnish a certain substance which is necessary to the proper nutrition of all the organs, we supply that lack by administering a similar substance obtained from animals.

It will be observed, moreover, that whatever it may be that is accomplished by the administration of thyroid extract, it is not the cure of disease of the thyroid gland. No one, surely, expects to cure disease of the peptic glands by giving pepsin, or disease of the pancreas by giving pancreatin. Cure can only be obtained by measures which will secure natural reproduction of the missing secretions.

The brain, so far as we know, secretes nothing physical. So far as we know, there is no symptom or symptom-complex which can be attributed to defect in any supposed secretory function of the brain. Consequently, there is nothing in the whole nosology which, on theoretic grounds, the admistration of brain-extract could be expected to remedy. Similarly, the heart, so far as we know, secretes nothing, and there is no symptom or symptom-complex which can be attributed to default of supposed secretory function on the part of the heart. Equally, therefore, there is no ground for the administration of heart-extract to remedy disorder caused by disease of that organ. For, let us remember, the thyroid extract does not cure thyroid disease, the thymus extract does not cure disease of the thymus, the pancreatic extract does not cure disease of the pancreas; and to expect brain-extract to cure brain-disease, or heart-extract to cure heart-disease, is on a par with the science of the Obi-doctor and the practice of the lizard-giving Chinamen.—DR. S. SOLIS-COHEN, in *The Polyclinic.*

SCIENCE AND EXPERIENCE IN MEDICINE.

To the student himself I would say, Cultivate the sciences which lie at the foundation of medicine, for they are to be the key to you that will unlock the treasure-house of the future. They will give to you that sense of satisfaction that arises out of your knowing that you are in the van with progress. Not any the less thereby, but rather the more fitted will you be for professional work when you enter upon it. For this cultivation there is abundance of opportunites in your undergraduate course; and, indeed, the Medical Council has, with a wise foresight, provided that you may pass the fifth year of your course in laboratory work wholly. If, on the other hand, you neglect the sciences, you will be hampered in the appreciation of your work, and the exigencies of a practice will prevent you from overtaking the arrears of knowledge due to that neglect. You may then fully realize your mistake, when regret is of no avail to repair it.

No one, I believe, esteems more highly than I do professional attainments and skill. Nor do I deride experience, for it is not that which makes you satisfied with what has been done, but rather that which stimulates your desire to know more. Perhaps the best view of experience is that given by Tennyson in his poem, "Ulysses." The old hero, who had gone unwillingly with the Greek host, has, after ten long years before Troy and ten years of peril and adventure on the sea, returned to Ithaca, and he is represented as resolving to take up once more the life of change and discovery. I quote one familiar passage because it describes my ideal of the scientific spirit, whether it is to be found in the laboratory or at the bedside, and because it gives to the student of to-day a glimpse of the life that may be his in after-years:

> "I am a part of all that I have met;
> Yet all experience is an arch wherethro'
> Gleams that untravelled world whose margin fades
> Forever and forever when I move.
> How dull it were to pause, to make an end,
> To rust unburnished, not to shine in use!
> As tho' to breathe were life! Life piled on life
> Were all too little, and of one to me
> Little remains; but every hour is saved
> From that eternal silence, something more,
> A bringer of new things; and vile it were

For some three suns to store and hoard myself,
And this gray spirit yearning in desire
To follow knowledge, like a sinking star,
Beyond the utmost bound of human thought."

—PROFESSOR A. B. MACALLUM, Inaugural Lecture University Medical Faculty, Toronto, October 3, 1893.

Dispensary Abuses.—In perusing the discussion on the dispensary system, it is impossible to resist the conviction that most of the dispensaries are badly managed, that there are too many of them for the real needs of the poor, and that the gratuitous services of the physicians are not properly appreciated.—*The New York Medical Record.*

CORRESPONDENCE.

NEW YORK LETTER.

Dupuytren's Contraction—Surgery of the Hand—The Coroner System—Contusion and Rupture of the Ileum—Dispensary Abuses.

To the Editor of THE MEDICAL NEWS,

SIR: Following so close upon the many annual meetings and medical congresses, the closing months of the year are not usually marked by very great activity in medical circles. In this matter of having too many medical societies and meetings we are all agreed, just as we are united in the opinion that the large number of medical journals are more than enough for even a great country like ours; yet new medical societies and new medical periodicals spring up on every hand.

A short time ago the Wesley M. Carpenter Lecture was delivered before the Academy of Medicine by Dr. Robert Abbé. He took for his theme "The Surgery of the Hand," and dwelt at some length on the subject of Dupuytren's contraction, to which, as is well known, he has devoted considerable attention. Mr. William Adams, of England, who is also a well-known authority on this subject, holds to the gouty theory of its causation, whereas Dr. Abbé is the champion of the traumatic theory. Some time ago the latter published an article, based on twenty-five private and fifteen hospital cases, in which he propounded this theory, viz.: that a traumatism of the nerve-ends in the palm, if reflected to the central nervous system, and thence to the part originally hurt, together with a secondary series of reflex symptoms reflected to the corresponding part of the opposite hand, would perfectly account for the clinical phenomena observed. He had never met with gouty concretions in connection with Dupuytren's contraction, and he looked upon the gouty element as a pure assumption. This peculiar contraction attacks by preference the joints of the ring and little fingers, in other words, those most subject to bruises or other traumatism. To clinch the matter still further the lecturer reported a number of cases in which there was a distinct history of a traumatism bearing directly on the development of the symptoms of Dupuytren's contraction. The operative treatment for the relief of this condition is carried out very satisfactorily under cocain-anesthesia, and after the division of the tense bands the wounds are covered with "protective" and damp compresses, and the dressings are kept moist by covering them with gutta-percha tissue. The operation should be completed within twenty minutes, as this seems to be about the length of time an Esmarch bandage can be tolerated. A firm bandage should be applied before the removal of the Esmarch bandage. The first change of dressing is made at the end of twenty-four hours, and the second on the fourth day. Dr. Abbé considers it much better to allow the parts to assume a comfortable position at first, and not be confined on a splint for the first week, rather than to immediately apply a straight splint, as recommended by Mr. Adams. The lecturer then went on to describe the peculiarities of the various other important affections of the hand, such as neuroses, tumors, "trigger-finger," "drop-finger," and the like. He said that sometimes small herniæ of the sheaths of the tendons are found buried in the palm of the hand. They resemble "weeping sinews," but cannot be dissipated by a blow. Although they occasionallydisappear without treatment, such an occurrence is so rare that the surgeon should not be deterred by this from dissecting them out when they cause any trouble. He had had very gratifying results in the treatment of webbed fingers and burns of the hand by a resort to Thiersch's method of skin-grafting. In the case of webbed fingers, split the web, and dissect out any tough part; then carefully apply a long and narrow Thiersch graft up one side and down the other. In one case treated in this way the parts were perfectly healed within three weeks. In some cases of severe burns, such as are produced by the hand being caught in a hot mangle, this method of grafting enables the surgeon to restore the hand to usefulness; for these grafts do not have the same tendency to contract that ordinary scar-tissue possesses. The wonderful results sometimes obtained by replacing nearly severed members had led him to make a series of experiments on animals with a view of devising some method by which the arterial supply might possibly be restored to an amputated limb, so that the limb might be grafted back to its original or to a corresponding stump. These experiments are not yet completed, but he had succeeded in inserting a small piece of glass tube into the femoral artery of a dog and into the aorta of a cat, and at the close of the lecture these animals were exhibited.

The coroner's system has again been the subject of recent investigation, and this time, I am glad to note, the newspapers have called the attention of the general public to the abuses of the coroner's office. It is, of course, the old, old story about an antiquated system, which at the best consumes the public money and gives but little in return. Among the ignorant classes the mere mention of the coroner inspires a feeling of awe and dread, and to those who are better informed as to the duties of the coroner and the value of his services he is still an "awful" person. I do not mean to say that the present coroners are individually any worse than their predecessors, but what is to be expected of a system which is chiefly political, and in which the important work of the deputy coroner is usually let out to the lowest bidder? It is well known that many of the inquests are nothing but farces, and the community is to be congratulated if the "viewing of the body" actually takes place—even from a distance—for it is sometimes only a mental process—a creature of the imagination.

The writer well remembers certain experiences of this kind which he had during his hospital days. For example, a patient who had sustained a dislocation of the knee developed delirium tremens soon after his admission to the hospital, and although appearing one morning in every way better than he had done the previous night, he was found dead only a few minutes after the house-surgeon had left the ward. We were entirely at a loss to account for his death, and the deputy coroner, after trying in vain to elicit some information from me which would give him at least a slender basis of fact on which to make out the certificate of death, admitted frankly that he had no idea what caused the patient's death. Yet in the face of this confession he positively refused to make a post-mortem examination. The attending surgeon, after arguing the matter with the deputy coroner, finally remarked, with indignation: "Well, all that we can do with you fellows is to remember you on election day." This was certainly a truly American way of disposing of the matter, and I sincerely hope the coroner's system in New York will be disposed of in the same way at the Constitutional Convention; but I am constrained to add that in this particular instance the coroner must have been forgotten on election day by the better part of our citizens, for it is not necessary to go back very far in history to learn that he was appointed afterward to a very important and responsible medical position. At another time I remember receiving a document from one of our well-known coroners, ordering me to deliver up the body of a man who had died in the hospital from a fracture of the skull. Although he had received this injury from a collision of a horse-car with his wagon, and there was every probability of there being a suit for damages, the coroner stated in this paper that *he had viewed the body*, and had duly held an inquest in his office before such and such witnesses, and that as a result of this investigation he had come to the conclusion that the person had met his death from fracture of the skull. All this was certified to in spite of the fact that no representative of the coroner's office had appeared at the hospital to make any inquiries there in regard to the deceased, or had viewed the body—even through a telescope.

I have not touched upon the evils or the follies of the coroner's jury, but the foregoing cases, affecting as they do two very prominent representatives of the coroner's office, who have "served the public" (?) for many years, are sufficient to show that, even supposing the system to be a good one—which it is not—its administration in New York City is very bad.

Before leaving this subject, the writer cannot refrain from alluding to the case of the late Colonel Elliott F. Shepard, who died so unexpectedly after etherization. Here there was a grand opportunity for the coroner to do yeoman service to the public by making a post-mortem examination and determining the real cause of death, and so reëstablish the public confidence in ether as an anesthetic; but the coroner, in his superior wisdom, decided that such an examination was not necessary. As a result, a sort of panic seemed to seize the people, and it was very difficult for a time to induce persons to consent to be etherized. This case has been discussed again and again in our medical societies, but all the arguments on this subject lack the force and precision which they would have if a careful post-mortem examination had been made.

At the last meeting of the Society of the Alumni of Bellevue Hospital, the president, Dr. Frederick Holme Wiggin, reported a case which, although chiefly surgical, carries an important lesson for the general physician to bear in mind. The case was one of contusion and rupture of the ileum, with peritonitis, yet without any external wound to indicate to the physician the grave nature of the internal injury. The patient was a colored boy, fifteen years of age, who had been kicked by a horse in the right lumbar region. He vomited a little blood after the accident, and complained of continuous nausea, and when seen some hours later, although suffering slightly from shock, and having an anxious expression, his pulse was 80, and his temperature normal. Owing to a misunderstanding, Dr. Wiggin did not see the patient again until the next evening, when the signs of peritonitis were quite evident. He at once performed celiotomy, followed by enterectomy and circular enterorrhaphy by Maunsell's method. A knuckle of the ileum near the jejunum looked as if it might become gangrenous, and although no perforation could be discovered prior to its removal, this portion of the intestine was resected. The operation was eminently successful, and the patient was shown to the Society. In reporting the case, the author called attention to the fact that he had poured a quantity of a fifteen-volume solution of hydrogen dioxid into the peritoneal cavity, and had allowed it to remain there for a short time, in order to completely disinfect this cavity after the accidental escape of some of the contents of the bowel. The resulting foam was then washed away and the cavity flushed with hot sterilized salt solution (0.6 per cent.) and the abdominal wound closed, leaving the peritoneal cavity full of the salt solution. The object of this was "to lessen shock, to prevent adhesions, to aid in the readjustment of the intestines and omentum to their proper position, and to lessen the danger of septic peritonitis."

In the discussion of this paper, the general opinion among the surgeons seemed to be that Maunsell's method of operating on the intestine was a great step in advance, as it greatly simplified and shortened the operation. Dr. Robert A. Murray called special attention to the fact that many cases end fatally because the profession at large believes that if peritonitis is present, there must be an elevation of temperature and an acceleration of pulse and respiration. This was a very grave mistake; the peritonitis might even be ushered in by a decided fall in the temperature. The peculiar facial expression and the smallness of the pulse were the most important guides in the diagnosis of these cases.

Several other speakers took the same ground, and urged very strongly that the general practitioner should be made acquainted with these facts, as it was he who would ordinarily be called upon to see such cases at a time when operation held out a fair prospect of success. Dr. Matthew D. Field emphasized, by narrating a case, the importance of being on the alert for injury of the intestine or other viscera in cases of traumatism, even when there are no external marks of violence. A man was hurt on the elevated railroad by a "buffer accident," but was able without assistance to walk several blocks, and reach his home, which was several miles distant. He

had no serious symptoms for three days, when he suddenly developed stercoraceous vomiting. After a hasty consultation, the physicians who had been summoned made a diagnosis of intussusception, and proceeded to give him a high enema, whereupon the patient went into collapse and died. The speaker was present at the autopsy, and it was then found that the mesentery had been torn away for nearly half an inch, and that gangrene had resulted in nearly two feet of intestine. The intestine had also been wounded in three other places, but all of these wounds had healed, and the man would have recovered had it not been for the gangrene which followed the tearing of the mesentery. The injection had caused a rupture of one of the wounds in the intestine.

I have so often written about the dispensaries and their abuses that I would not venture to say any more were it not that this is a matter of more than local interest. The latest public ventilation of this topic occurred a few weeks ago at a meeting of the Section on Public Health of the Academy of Medicine. The discussion was opened by Mr. Charles C. Savage, President of the Demilt Dispensary, and Trustee of the Roosevelt Dispensary, who read a paper entitled "Dispensaries, Historically and Locally Considered." The author seemed to think that because free music in the parks and free libraries and free baths did not demoralize the recipients, free medical treatment ought not to be harmful, and an experience of forty years had led him to feel quite sure that dispensary work was the least harmful of the ordinary charities. In closing, he made the astounding statement that the dispensaries having physicians on their boards of managers were among the worst in the city. In the discussion, Dr. H. D. Chapin said the work done in the dispensaries was worthless, from a scientific standpoint. He insisted that those who treat the sick in the dispensaries should have the management of these institutions. Dr. F. W. Jackson firmly believed that good scientific work could be done in dispensaries, and said that the doctor outside had no right to object to the dispensaries, for he had not the energy to get in them. Dr. Joseph Collins saw no more reason for physicians giving their services without compensation than for ministers or lawyers giving theirs. He thought the condition of the medical profession here at present might be aptly compared to that of the American colonists, who suffered from taxation without representation. Among those who also participated in this discussion was a Mr. Cook, a layman, who seemed to think that the more the public could get out of the doctors, or, in fact, out of almost anybody, without paying for it, the better. He said that he had never observed any of the demoralization which some claimed was the result of our dispensaries as at present conducted, but he did know of thousands of people who had been pauperized by doctors.

If this discussion is fairly representative of the present state of public opinion on this subject, this vexed question is evidently far from a satisfactory and proper settlement.

The Biography of Dr. Ephraim McDowell, by his granddaughter, Mrs. Valentine, formerly Mrs. Ridenbaugh, will be furnished to subscribers—we are informed by Mrs. Valentine—so soon as the new edition can be published.

NEWS ITEMS.

Sanitary and Medical Service on Board of Emigrant Ships.—The report of the Committee of the American Public Health Association "On Sanitary and Medical Service on Board of Emigrant Ships" was presented by Medical Director Albert L. Gihon, U.S.N., Chairman, at the session of the twenty-first annual meeting of the Association, held at the Art Institute, Chicago, Ill., Wednesday, October 11, 1893, as follows:

Your Committee beg to report the following concise statement of their views as to the organization of such a sanitary and medical service on board vessels engaged in bringing immigrant passengers to the United States, as the experience and intelligence of this age make a necessity among civilized and enlightened nations.

They are of opinion and advise:

First. As to the location and dimensions of the quarters for emigrant passengers, the number of berths in each, and the provisions for their ventilation and cleansing:

That the preferable location for such quarters is abaft the midship section of the vessel; that single males' quarters shall be distinct from those occupied by women and children, and that if any are forward the midship section, it shall be those for single men;

That there shall never be more than two decks (properly there should be only one) occupied by emigrant passengers' berths, with sixteen feet of superficial space for each adult on the upper berth-deck and twenty feet of such space on the lower berth-deck, with not more than two tiers of berths on each deck, the bottom of the lower tier being not less than eighteen inches above the deck, with not less than thirty inches between the two tiers and between the upper tier and the ceiling of the compartment to allow the occupants of the berths to sit upright;

That no solid partitions or bulkheads shall be placed in any steerage compartment to obstruct light and air;

That the framework of the berths shall be of iron easily removable, that the compartment may be completely emptied and thoroughly cleaned after each passage;

That a steam ventilating apparatus by aspiration shall be introduced into all emigrant vessels; and

That all compartments occupied by passengers and crew shall be lighted by the incandescent electric light by night and day.

Second. As to the location and dimensions of hospitals on board such vessels and the number of sick-berths for which provision should be made:

That the hospitals, or "sick-bays," on board emigrant passenger vessels shall be at the extreme after-part of the upper deck, thoroughly lighted and ventilated, with eighteen feet of superficial space for every fifty passengers, and not less than four sick-berths or hospital-cots for every hundred passengers.

Third. As to the number of medical officers proper for the maximum of emigrant passengers any vessel should be permitted to carry, being the maximum number able to be berthed with regard to health, cleanliness, and comfort:

That there should be one duly qualified medical officer for every two hundred and fifty passengers.

Fourth. As to the professional records which the senior medical officer of every such vessel should be required to keep and his responsibility to the health-authorities of the port of arrival for the truthful and professionally accurate statements of such records:

That the senior medical officer of every such vessel shall be required to keep (1) *a list of sick*, recording in a bound book, in the order of their admission, and on a single line, the name, sex, age, birth-place, date of admission to treatment, date of death or discharge from treatment, disease, and such remarks as may be necessary to enable the inspecting medical officer at the port of arrival to have a clear and complete understanding of the case; and (2) *a medical journal*, in which each medical officer, when there are more than one, shall record the medical history, including the symptoms and treatment of every case, to be approved and signed by the senior medical officer at the close of the day's record; and such list of sick and medical journal shall be submitted to the health-authorities of the port of arrival, and the accuracy of the statements in such records shall be established by oath, and penalties for perjury shall be provided.

Fifth. As to the location and capacity of latrines for emigrant passengers:

That the latrines, shallow troughs with a continuous flow of salt water, shall be on the upper deck under shelter, with two water-closet seats for every fifty passengers, with a proportionate number for women and children, in a separate locality near their own quarters and inaccessible to men.

Sixth. As to the number of attendants provided for such passengers, and their duties as to policing and cleansing emigrants' quarters:

That there shall be not less than one berth-deck attendant for every fifty passengers; female attendants in the same proportion being exclusively assigned to the quarters for women and children;

That the berth-decks shall be thoroughly cleansed every morning by the attendants; never wetted in rainy or damp weather, when they shall be scraped, swept, and freshly sanded, and in pleasant weather washed with hot water and quickly dried, the passengers being sent on deck during the operation;

That the berth-deck attendants shall be on duty night and day in rotation, by regular sea-watches, and the attendants on watch be required to remove the dejecta of sea-sick passengers without delay; and

That benches and mess-tables shall be provided and the passengers' food be distributed by the berth-deck attendants, who shall take away all unused food, and carry the dishes to the pantry.

Seventh. As to additional provisions for the personal health, cleanliness, and comfort of emigrant passengers:

That wash-rooms under cover, with basins supplied with running water, shall be provided on the upper deck, those for men to be separate from those intended for women and children;

That fresh water for drinking purposes shall be provided in each compartment; and

That inexpensive mattresses, pillows, these to be serviceable as life-preservers, and blankets shall be provided for emigrant passengers, the mattresses to be destroyed after each passage, and the pillows and blankets to be steamed and washed before being again used.

While other suggestions as to sanitary provisions might appropriately be made, your Committee feel that these indicated are of such urgent necessity that they should be insisted upon and put into effect without delay.

All which is respectfully submitted:

ALBERT L. GIHON,
Medical Director U. S. Navy, Chairman.
FREDERICK MONTIZAMBERT, M.D., F.R.C.S, D.C.L.,
Supt. Quarantine Station, Grosse Isle, Quebec.
WALTER WYMAN,
Supervising Surgeon-General U. S. M.-H. S.
S. R. OLLIPHANT, M.D.,
President State Board of Health of Louisiana.
WM. T. JENKINS, M.D.,
Health Officer of the Port of New York.

The Pennsylvania State Medical Society will hold its next meeting at Gettysburg, May 15, 16, 17, and 18, 1894. Those desirous of presenting papers are requested to notify, at an early date, the Chairman or any other member of the Committee of Arrangements. Dr. E. E. Montgomery, of Philadelphia, is the Chairman, and the other members of the Committee are: Dr. Isaac C. Gable, of York; Dr. George S. Hull, of Chambersburg; Dr. John C. Davis, of Carlisle; Dr. Henry Stewart, of Gettysburg; Dr. George Rice, of McSherrystown; Dr. E. W. Cashman, of York Springs.

Dr. William Hunt has resigned as one of the visiting surgeons of the Pennsylvania Hospital, and Dr. Richard H. Harte has been elected to fill the vacancy. The Board of Directors of the Hospital has passed a minute expressive of its appreciation of the work of Dr. Hunt, covering a period of thirty years as Attending Surgeon, and of more than forty-three years in various relations with the Hospital.

The Tri-state Medical Journal is the name of a new monthly publication emanating from Keokuk and under the editorial care of Dr. James Moores Ball. Though *Tri-state* in name, it proposes to be unlimited in territory, and promises to be a journal preëminently for young men. It dedicates itself to higher medical education and the advancement of scientific medicine.

The Next Meeting of the American Medical Association will be held at San Francisco, on the first Tuesday in June, 1894, instead of on the first Tuesday in May, in order to permit of a discussion of the Code by the various State Societies that meet just before the meeting of the national Association.

Foot-ball Fatality.—A youth, aged eighteen years, of Normanby, near Middlesborough, has died from injuries sustained on the 11th inst., during a match between Normanby and the Acklem Swifts.—*Lancet*, Nov. 25th.

Dr. Charles Warrington Earle, President of the Chicago Medical Society and one of the founders of the Chicago College of Physicians and Surgeons, died on November 19th, of meningitis.

Correction.—In the first line of the first column of page 478 of THE NEWS of October 28th the dose of trinitrin should have been given as gr. $\frac{1}{50}$ and not as gr. $\frac{1}{5}$.

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ORIGINAL ARTICLES.

THE NATURE OF THE GERMICIDAL CONSTITUENT OF BLOOD-SERUM.[1]

BY VICTOR C. VAUGHAN, M.D., PH.D.,
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AND
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As early as 1872, Lewis and D. Cunningham[2] demonstrated the fact that bacteria injected into the circulation rapidly disappear. In the blood of twelve animals that had been treated with such injections, bacteria could be found after six hours in only seven. Of thirty animals, bacteria were found after twenty-four hours in the blood of only fourteen, and of seventeen animals, bacteria were found in only two when the examination was made from two to seven days after the injection.

In 1874, Traube and Gschiedlen[3] found that arterial blood, taken under antiseptic precautions from a rabbit into the jugular vein of which one and one-half c.c. of a fluid rich in putrefactive germs had been injected forty-eight hours previously, failed to undergo decomposition for months. These investigators attributed the germicidal properties of the blood to its ozonized oxygen. Similar results were obtained by Fodor[4] and by Wysokowicz.[5] The latter accounted for the disappearance of the germs, not by supposing that they were destroyed by the blood, but that they found lodgment in the capillaries.

The first experiments made with extra-vascular blood were conducted by Grohmann[6] under the direction of A. Schmidt in his researches upon the cause of coagulation. It was found that anthrax-bacilli, after being kept in plasma, were less virulent, as was demonstrated by their effect upon rabbits. Grohmann supposed that in some way the bacteria were influenced by the process of coagulation.

[1] Read by title before the Medical Section of the First Pan-American Medical Congress, Washington, September 5, 1893.

[2] Eighth Annual Report of the Sanitary Commission of the Government of India.

[3] Schlesische Gesellschaft f. Vaterländ. Cultur, 1874.

[4] Archiv f. Hygiene, B. 4.

[5] Zeitschrift f. Hygiene, B. 1.

[6] Ueber die Einwirkung des zellenfreien Blutplasma auf einige pflanzliche Mikroörganismen, Dorpat, 1884.

In 1877, Fodor[1] made a second contribution to this subject, and in this he combated the retention-theory of Wysokowicz. One minute after the injection of one c.c. of anthrax-culture into the jugular vein, in eight samples of blood, Fodor found only one colony of the bacillus. Then he took the blood from the heart with a sterilized pipet and added anthrax-bacilli to it. This was kept at 38° C., and plates made from time to time showed a rapid diminution in the number of germs; after a time, when the blood had lost its germicidal properties, the number of germs began to increase.

In 1888, Nuttall,[2] working under the direction of Flügge, used defibrinated blood taken from various species of animals, rabbits, mice, pigeons, and sheep, and found that this blood destroyed the bacillus anthracis, bacillus subtilis, bacillus megaterium, and staphylococcus pyogenes aureus, when brought in contact with them. He also confirmed the further finding of Fodor that after a while the blood loses its germicidal properties and becomes a suitable culture-medium in which the germs grow abundantly.

Nissen[3] continued this work under Flügge's direction and reached the following conclusions:

(1) The addition of small quantities of sterilized salt-solution or bouillon to the blood does not destroy its germicidal properties.

(2) Cholera-germs and Eberth's bacilli are easily destroyed by fresh blood.

(3) For a given volume of blood there is a maximum amount of bacilli which can be destroyed.

(4) Blood whose coagulability has been destroyed by the injection of peptone is still germicidal.

(5) Blood in which coagulation is prevented by the addition of 25 per cent. of magnesium sulfate has its germicidal properties decreased.

(6) Filtered blood-plasma from the horse is germicidal.

Behring[4] has attributed the action of the blood of the white rat on anthrax-bacilli to its great alkalinity. He has made a number of titrations by which he shows that the blood-serum of the white rat is somewhat more alkaline than that of certain animals that are more susceptible to anthrax, such as the rabbit, the guinea-pig, and the cow. His deduction is not justified, because there are many other and

[1] Deutsche medicinische Wochenschrift, 1887.

[2] Zeitschrift f. Hygiene, B. 4. [3] Ibid., B. 6. [4] Ibid., B. 6.

more important points in which these animals differ more markedly from the white rat than in slight differences in the alkalinity of the blood-serum. Had he shown that the blood of the adult rat, which is not susceptible to anthrax, is more alkaline than that of the young rat, which is susceptible, his argument would have been more plausible; but even then it would not have deserved the dignity of positive evidence.

In 1890, Buchner,[1] aided by Voit, Sittmann, and Orthenberger, made a most valuable contribution to our knowledge of the germicidal properties of blood. The results of this work are stated as follows:

1. The germicidal action of blood is not due to phagocytes, because it is not influenced by the alternate freezing and thawing of the blood, by which the leukocytes of the rabbit are destroyed.

2. The germicidal properties of the cell-free serum must be due to its soluble constituents.

3. Neither neutralization of the serum, nor the addition of pepsin, nor the removal of carbon-dioxid gas, nor treatment with oxygen has any effect upon the germicidal properties of the blood.

4. Dialysis of the serum against water destroys its activity, while dialysis against 0.75 per cent. salt-solution does not. In the diffusate there is no germicidal substance. The loss by dialysis with water must be due to the withdrawal of the inorganic salts of the serum.

5. The same is shown to be the case when the serum is diluted with water and when it is diluted with the salt-solution. In the former instance the germicidal action is destroyed, while in the latter it is not.

6. The inorganic salts have in and of themselves no germicidal action. They are active only in so far as they affect the normal properties of the albuminates of the serum. The germicidal properties of the serum reside in its albuminous constituents.

7. The difference in the effects of the active serum and that which has been heated to 55° C. is due to the altered condition of the albuminate. The difference may possibly be a chemical one (due to changes within the molecule) or it may be due to alterations in mycelial structure. The albuminous bodies act upon the bacteria only when the former are in active state.

We wish at this point to call attention to an inconsistency between the results obtained by Buchner and the conclusions that he draws. In experiment No. 45 he renders the serum slightly acid and adds 0.1 gram of pepsin to each five c. c. of serum (showing by a side experiment that this pepsin actively digests coagulated egg-albumin in neutral solution) and finds that the digestive action of the pepsin does not lessen the germicidal properties of the serum. In fact he states this in his conclusions, but his ultimate opinion, and the one held by him in his latest contribution, is that the germicidal constituent of the blood is the serum-albumin. How much serum-albumin remains in blood-serum after it has been thoroughly digested with pepsin? He could scarcely have chosen a more positive method of demonstrating that the germicidal constituent is not serum-albumin. Either his pepsin was not active, and on this supposition his experiment is without value, or the active constituent of blood-serum is a substance that is not destroyed or materially altered by peptic digestion. We know that the peptones not only have no germicidal properties, but that they belong to that class of proteids that is most favorable to the growth and development of germs. We recognize this fact when we add peptones to the various artificial media on which we cultivate germs. However we shall return to this subject. At present we shall proceed with the literature of the subject.

The successful researches of Buchner led many other investigators to enter this field of experimentation, and some of them have made valuable contributions to our knowledge of the germicidal action of the blood under varying conditions, but so far as the nature of the germicidal constituent is concerned but little or no progress has been made. Prudden[1] found that ascitic and hydrocele fluids restrain the development of certain germs. Rovighi[2] reported that the germicidal action of the blood is increased in febrile conditions. Pekelharing[3] enclosed anthrax-spores in bits of parchment and introduced them under the skin of rabbits. Thus treated, the spores soon lost their virulence and finally their capability of growth. The destruction of these spores could not have been due to phagocytes, which did not penetrate the parchment, but must have been caused by soluble poisons. Behring and Nissen[4] found that the serum of the white rat, the dog, and the rabbit destroys anthrax-bacilli, while serum obtained from the mouse, sheep, guinea-pig, chicken, pigeon, and frog, has no such action. It will be observed from this that there is no constant relation between the germicidal action of the blood of animals of different species and their susceptibility to the disease caused by the germ. Thus, the rabbit is highly susceptible to anthrax, notwithstanding the fact that its blood destroys large numbers of these germs. On the other hand, the chicken is immune to anthrax from the moment when it comes from the shell, and yet the bacillus anthracis grows luxuriantly in the extra-vascular blood of the chick.

[1] Archiv f. Hygiene, B. 10.

[1] Medical Record, 1890.
[2] Atti della Accad. Med. di Roma, 1890.
[3] Ziegler's Beiträge, B. 8.
[4] Zeitschrift f. Hygiene, B. 8.

This demonstrates that there is a great difference between the action of extra-vascular blood and that circulating in the body, constantly fed, and in case of need, altered in composition by certain glands.

Halliburton has prepared from the lymphatic glands a globulin which he designates as cell-globulin β, and which agrees with fibrin-ferment in inducing coagulation in plasma. Hankin[1] has tested the germicidal properties of this cell-globulin. His experiments have been conducted in the following manner: The lymphatic glands (in later experiments the spleen also) of a dog, or of a cat, are freed as much as possible from fat and connective tissue, then finally divided and extracted with dilute solution of sodium sulfate (one part of a saturated solution to nine parts of water). The cell-globulin passes into solution, while the other proteids are but sparingly soluble. After twenty-four hours, the fluid is filtered and mixed with an excess of alcohol. The voluminous precipitate containing the cell-globulin is collected on a filter and washed with absolute alcohol. For use, a part is dissolved in water, and a small quantity of a bouillon-culture of the anthrax bacillus is added. From time to time plate-cultures are made, along with control-plates, and in this way the germicidal properties of the substance are demonstrated. Hankin closes this contribution with the following conclusions:

1. Halliburton's cell-globulin β has marked germicidal properties.

2. In this respect it differs from fibrin-ferment.

3. The germicidal properties of this substance seem to be identical with those of serum as described by Buchner, Nissen, and Nuttall.

4. The active properties of the serum are probably due to this or to an allied body.

Bitter[2] has repeated the experiments of Hankin, but fails to confirm them. Bitter states that he has followed Hankin's directions exactly. However this may be, it is certain that the spleen contains a germicidal substance, but whether it can be extracted by the method of Hankin or not we do not know. That the germicidal constituent of the spleen is identical with Halliburton's cell-globulin β or with any other globulin, we very much doubt. It certainly is a nuclein, and it is altogether possible that Hankin obtained traces of this nuclein in his extracts. In this case the extract would show, or fail to show, germicidal properties according to the relative amounts of nuclein and other substances present. The less globulin and the more nuclein present the more marked would the germicidal effect be.

Christmas[3] has prepared a germicidal substance from the spleen and other organs by the following method:

The animal is killed with ether, opened under antiseptic precautions and the organ removed, cut into fine pieces, covered with fifty cubic centimeters of glycerin and allowed to stand for twenty-four hours, and then filtered. The filtrate is precipitated with five times its volume of alcohol, and this fluid is immediately decanted. The precipitate is washed with absolute alcohol in order to remove the glycerin. Then the traces of alcohol are removed by pressure and the precipitate dissolved in twenty-five cubic centimeters of distilled water. Through this solution air is driven for some hours in order to destroy the traces of alcohol. Then the fluid is filtered and its germicidal action tested.

Bitter has also examined this method, and the impartial reader must see that he has not done so with fairness. However, this fact renders the work all the more valuable because his results confirm the statements of Christmas. Bitter killed his animals by venesection, and, in some cases at least, prepared the substance in unsterilized vessels; but even when this was done the solution was germ-free and manifested marked germicidal properties. Bitter finally finds a difference between this substance and the germicidal constituent of blood-serum; the latter, he states, is certainly destroyed by a temperature of 65°, while the solution of Christmas, after having been heated to this temperature, is still capable of destroying from 35,000 to 40,000 typhoid-bacilli within four hours. Buchner,[1] in his latest contribution to the subject has the following to say in condemnation of Christmas:

"A method given by Christmas for the preparation of germicidal solutions from the organs of normal rabbits has also been tested by Bitter. Germicidal solutions were indeed obtained, which, however, differed materially from active serum, for in three experiments, notwithstanding heating to 65° C., the germicidal action remained."

It is altogether possible that the more powerful action of the solution made by Christmas is due to the fact that it contained the germicidal substances in more nearly a chemically pure condition than they exist in blood-serum. It is also highly probable that the arrest of the germicidal activity of blood-serum by a temperature of 55° C. is not due to the destruction of its germicidal constituent, but is due to the action of the heat on other constituents of the fluid.

Some attempts have been made to determine the nature of the germicidal constituent by the action of precipitating reagents on the proteids of blood-serum. In his latest contribution, Buchner states that he has not been able to obtain a germicidal solution

[1] Centralblatt f. Bakteriologie, B. 9.
[2] Zeitschrift f. Hygiene, B. 12.
[3] Annales de l'Institut Pasteur, t. v.

[1] Archiv f. Hygiene, B. 17.

by precipitating all the proteids with absolute alcohol, freeing the precipitate from alcohol, drying it, and then redissolving. He does not give the methods employed in freeing the precipitate from alcohol, the temperature or the conditions under which it was dried, or the nature of the menstruum by which resolution was effected. In the absence of these needed details, his conclusion that alcohol destroys the germicidal substance must remain open to question. On the other hand, Christmas states that when the proteids are precipitated with alcohol and the precipitate dissolved in a volume of water equal to that of the original serum, the solution thus obtained has a more powerful germicidal action than the serum. Bitter in an experimental review of the statement of Christmas gives the following detailed account of one experiment:

"Ten cubic centimeters of serum were poured into fifty cubic centimeters of alcohol (strength of alcohol not given), stirred, and the precipitate immediately separated from the alcohol by filtration. (He fails to state whether or not sterilized filter-paper was used.) The precipitate was freed from alcohol by pressure between folds of filter-paper (again he fails to state whether or not this paper was sterilized), then dried at 37° C., and mixed with ten cubic centimeters of sterilized distilled water. On being allowed to stand for a short time at 37° C., nearly all of the precipitate was redissolved. The solution was then separated from the deposit by filtration (through unsterilized filter paper?) and tested."

It can scarcely be a matter of surprise that Bitter found germs nearly always present in the solution obtained in this careless manner. However, he did find that the germs present did not develop when the solution was kept at 37° C., and, moreover, that germs added to this solution were destroyed. Bitter concludes that in truth anthrax and typhoid bacilli are destroyed by "precipitated serum," but not so energetically as by normal serum.

Emmerich, Tsuboi, Steinmetz, and Löw[1] have made interesting and valuable contributions relating to the effect of precipitation of the proteids upon the germicidal action of blood-serum. An active serum was dialyzed in a sterilized parchment-paper tube against water for from twelve to eighteen hours. By the expiration of that time the serum-globulin, becoming insoluble on account of the withdrawal of inorganic salts, was deposited. The dialyzer was dried with sterilized filter paper and the globulin-free serum was precipitated with several volumes of alcohol. The precipitate was collected on a sterilized "falten-filter" and the alcohol removed from the precipitate by sterilized porous plates and filter-paper. The precipitate was then finely divided, dried for half an hour in vacuo at 36° C., then rubbed up in a sterilized mortar and dissolved in sterilized water, to which salt-solution had been added. In the solution thus prepared germs did not show, after from three to four hours, either a marked increase or decrease, but when the solution was heated to 100° C., allowed to cool, and then inoculated with germs, the increase was four-hundred-fold within four hours. It was next found that, if instead of water, a 0.05 per cent. aqueous solution of potassic hydrate was employed in dissolving the alcoholic precipitate in the globulin-free serum, this solution possessed all the germicidal strength of the original serum. The same was found to be true of dilute alkaline solutions of the alcohol precipitate in serum from which the globulin had not been removed. The dilute alkali was shown not to have any germicidal action in and of itself. From these experiments the investigators mentioned conclude that the germicidal constituent of blood-serum is an alkaline compound of serum-albumin. They also found that heating the serum-albumin alkaline solution to 65° C., or higher, destroyed its germicidal action, and they explain this effect of heat on blood-serum and on their artificial solution by supposing that the high temperature breaks up the combination of the alkali with the serum-albumin. Furthermore, they found that a serum that had been rendered inactive by a temperature of 55° C. could be regenerated in part at least by the addition of the small amount of alkali mentioned.

Since Fodor[1] and Zuntz[2] have shown that freshly-drawn blood rapidly decreases in alkalinity on standing *in vitro*, an explanation of the fact that blood-serum rapidly loses its germicidal properties naturally suggests itself. Emmerich and his co-workers confirm their belief in this theory by demonstrating that blood-serum that has been rendered very feebly acid (0.67 part of sulphuric acid per mille) has no germicidal action, but furnishes a good culture-medium.

The foregoing investigations are very valuable, inasmuch as they show the important rôle that the small amount of alkali plays in the germicidal action of blood-serum. This had, indeed, already been demonstrated by Fodor[3] by a quite different line of investigation. This experimenter found that the resistance of rabbits to anthrax is markedly increased by the administration, by the stomach or subcutaneously, of sodium phosfate, carbonate, or bicarbonate, or of potassium carbonate.

Löw concludes that the introduction of the alkali into the albumin-molecule increases its liability, and he cites examples from organic chemistry in support of this view.

[1] Centralblatt f. Bakteriologie, B. 12.

[1] Centralblatt f. Bakteriologie, B. vii.
[2] Centralblatt f. med. Wissenschaft, 1867.
[3] Centralblatt f. Bakteriologie, B vii.

There are some additional points of interest in the theory of Emmerich and his assistants. As has been stated, they believe that the serum-albumin is the germicide, but they think it highly probable that only a comparatively small part of the albumin is active, and this small part, they suppose, originates in the albumin of the daily food, which is converted into lymph-cells, and by the disintegration of these it passes into solution in the blood. They admit, however, that there are some reasons for believing, with Buchner, that the whole of the serum-albumin is active. They state that it is possible, *but highly improbable*, that the germicidal substance is not the serum-albumin, but some substance that is precipitated along with this by alcohol and other agents.

We hope to show that the germicidal agent is not serum-albumin and that this "highly improbable" substance does exist.

In a short and somewhat unsatisfactory review of the report of Emmerich and his co-workers, Buchner[1] devotes himself to a consideration of the question of the regeneration of serum rendered inactive by heating to 55° C. on the addition of an alkali. He details one experiment made by himself on this point. The experiment confirms the work of Emmerich, but Buchner offers an interpretation that is wholly theoretic and by no means convincing. He finds that the regenerated serum, when heated to 60° C., still has a retarding effect upon the growth of germs, and he argues from this that the germicidal action of the "regenerated serum" is (for some unknown reason) due to its being less suited to the growth of bacteria. No one knows better than Buchner the influence of various chemical substances on the temperature at which an active serum is converted into an inactive form, and yet he overlooks altogether the possible effect of increased alkalinity on this conversion. Had he heated the regenerated serum to 100° C. he would then have found that it forms a very fertile culture-medium.

Hankin[2] has recently published a paper that is more valuable in its suggestions than in its experimental details. He suggests that the germicidal substance is a special secretion of the eosinophile granular cells. The granular matter in these cells is, according to his theory, the antecedent of the germicidal substance.

There are many other minor contributions to this subject, but those mentioned contain all the essential points, and there is no necessity for a further review of the literature. It is true that Aronson[3] has very recently announced to the Berlin Medical Society that he has isolated a powerful antitoxin from the blood-serum of animals rendered immune to diphtheria, and that with this substance he has cured guinea-pigs infected with this disease. Following the example of another illustrious German investigator, he refuses to tell how this curative substance is prepared. It is needless to say that this manner of dealing with scientific investigations has not as yet found favor with the unsophisticated profession in the new world.

From a careful and critical study of the investigations that have been briefly reviewed, we have come to the following conclusions:

1. The serum-albumin is not the germicidal substance in blood-serum. As has been stated, either this must be true or the experiment by which Buchner demonstrated that an active pepsin does not destroy the germicidal action of blood-serum must have been an error; because peptic digestion readily and completely converts serum-albumin into peptones, and we know that peptones are especially favorable to bacterial growth.

2. The germicidal substance must belong to the proteids. Otherwise it would be difficult to explain the fact that a temperature of 55° C. renders blood-serum inactive.

3. The only proteid likely to be present in blood-serum and which is not destroyed by peptic digestion is nuclein.

Having reached these conclusions, the following questions naturally present themselves:

1. Is there a nuclein in blood-serum?

2. Has this nuclein, if there be one, germicidal properties?

These questions we have attempted to answer.

Dogs and rabbits were the animals from which the serum was obtained. Healthy animals that had not previously undergone any experimentation were selected. The animal was firmly fixed in a holder, the carotid was laid bare under antiseptic precautions. A ligature and a small clamp were applied to the artery about two inches apart, the former distad, and the latter centrad. Then a slit in the artery was made with a sterilized knife, and a small sterilized glass canula, with sterilized and dried rubber tube leading into a sterilized Erlenmayer flask, was introduced into the artery and held in place by another ligature. Then the clamp was removed and the blood flowed into the flask. In each case the animal was bled to death. The flask containing the blood was placed in the ice-chest and allowed to remain for twenty-four hours. By the expiration of this time, a wine-colored serum had separated. This serum was poured into a second sterilized flask and about ten volumes of a mixture of equal parts of absolute alcohol and ether were added. This produced a voluminous precipitate that was nearly white. This was allowed to stand

[1] Centralblatt f. Bakteriologie, B. xii. [2] Ibid.
[3] Berliner klin. Wochenschrift, 1893.

twenty-four hours, and in some cases much longer, the alcohol and ether twice, or more often, during the time, being decanted and replaced by equal volumes. Then the supernatant fluid was decanted and an equal volume of a 0.2 per cent. solution of hydrochloric acid containing active pepsin was added, and the flask placed in an incubator at 38° C. and the digestion was continued until the fluid failed to respond to the biuret test for peptones. Each time this test was made the fluid was decanted from the undigested portion and replaced by an equal volume of fresh digestive fluid. In some instances the flask containing this fluid was allowed to stand in the incubator for several days. This was not necessary in order to complete the digestion, but was allowed as a matter of convenience. In all cases the digestion was prompt and proceeded to a certain point, when it ceased altogether. The undigested portion was small in amount and grayish in color. This was collected on a small sterilized filter and washed first with 0.2 per cent. solution of hydrochloric acid, and then with alcohol. After the washing with alcohol, the filter was allowed to stand exposed to the air for half an hour or longer in order that all of the alcohol might pass through or evaporate. The precipitate was then dissolved in a sterilized solution of potassic hydrate. The strength of this alkaline solution usually employed was 0.12 per cent. Usually this solution contained in addition to the alkali 0.6 per cent. of sodium chlorid. In some instances a solution containing 1.2 grams of potassic hydrate, 6 grams of sodium chlorid, and 1 gram each of sodium bicarbonate and disodium hydrogen phosfate to one liter of water was employed as a solvent. The solution was filtered through a Chamberland tube and received in a sterilized flask.

The solution thus obtained was perfectly clear, colorless, and did not respond to the biuret test. The addition of strong nitric acid produced a cloudiness, which dissolved on the further addition of the acid. This acid solution did not become yellow on being heated, but did so after the addition of ammonia.

We have now answered the first question. Blood-serum contains a nuclein. We hope to investigate at some time in the future the relation between this nuclein and fibrin-ferment.

The origin of the nuclein found now for the first time in blood-serum is an interesting question. Does it come from the disintegration of the polynuclear cells, or shall we regard certain white blood-corpuscles as unicellular organs whose function it is to secrete this nuclein?

In proceeding to determine whether or not this nuclein has germicidal properties, the solution was distributed in sterilized test-tubes, five c.c. being placed in each tube. It should be stated that in dissolving the nuclein, the volume of the solvent employed was in all cases the same as that of the blood-serum from which the nuclein was obtained. These tubes were inoculated with different germs and plates made at varying intervals of time, in order to test the germicidal action. One and the same platinum loop was used in the preparation of each plate.

EXPERIMENT I.

A nuclein-tube was inoculated with the bacillus of *Asiatic cholera*, and plates made from this gave the following results:

Time,	Immediately	5 min.	15 min.	30 min.	1 hr.	1½ hr.	22 hrs.
No. of colonies,	2100	43	54	71	90	115	1200

That the alkali in which this nuclein was dissolved did not cause the decrease in the number of germs is shown by the subsequent increase.

EXPERIMENT II.

Staphylococcus pyogenes aureus.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	4000	1720	1050	810	0

EXPERIMENT III.

Anthrax bacillus without spores.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	100	43	10	1	0

EXPERIMENT IV.

Cholera-germ.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	470	45	1	0	410

It may be stated that the final increase in the number of cholera-germs occurred both in the nuclein-solution prepared from the serum of the rabbit and that prepared from the serum of the dog.

EXPERIMENT V.

Staphylococcus pyogenes aureus.

Time,	Immediately	1 hr.	5 hrs.	19 hrs.	24 hrs.
No. of colonies,	Countless	22,000	12,525	155	0

EXPERIMENT VI.

Anthrax-bacillus without spores.

Time,	Immediately	1 hr.	5 hrs.	19 hrs.	24 hrs.
No. of colonies,	1120	165	0	0	0

All of the foregoing experiments were made with the solution of nuclein in sterilized water containing 0.12 per cent. potassic hydrate and 0 6 per cent. of sodium chlorid. The following were made in the other solution mentioned. It may be stated that the culture of the aureus experimented with retained its vitality for days in water containing 0.5 per cent. of potassic hydrate.

EXPERIMENT VII.

Staphylococcus pyogenes aureus.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	5000	2500	1600	1200	0

EXPERIMENT VIII.

Anthrax-bacillus without spores.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	43	7	0	0	0

EXPERIMENT IX.

Cholera-bacillus.

Time,	Immediately	1 hr.	4 hrs.	7 hrs.	24 hrs.
No. of colonies,	350	105	150	42	0

EXPERIMENT X.

Staphylococcus pyogenes aureus.

Time,	Immediately	1 hr.	5 hrs.	19 hrs.	24 hrs.
No. of colonies,	Countless	25,000	5525	65	500

EXPERIMENT XI.

Anthrax-bacillus without spores.

Time,	Immediately	1 hr.	5 hrs.	19 hrs.	24 hrs.
No. of colonies,	430	0	0	0	0

We have made many other tests of the germicidal action of the nuclein obtained from blood-serum, but as all of them gave practically the same results, further repetition is unnecessary.

We have also made many experiments on the effect of heat and other agents on the germicidal action of this nuclein, but we prefer to report these later, as we have obtained some unexpected results. Suffice it to say that while boiling destroys the germicidal action, the temperature to which these solutions may be heated and still show some retarding action on germs has surprised us.

The fact that the germicidal constituent of blood-serum can be isolated has an important practical bearing. Blood-serum therapy has proved impracticable on account of the large amount of the fluid which must be injected. Nuclein-therapy now promises to enable us to avoid this difficulty, and possibly the near future may find us using this agent in the treatment of disease. The nuclein may be obtained from an animal rendered immune to diphtheria, and a sufficient quantity of this injected into the blood or under the skin of a child suffering with this disease may effect a cure, but we will not prophecy. The future will tell us what it has in store when the future shall have become the present.

ATONY OF THE STOMACH.[1]

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ATONY of the stomach is that condition in which the muscular walls have lost their tonicity, with a resultant motor insufficiency, in consequence of which the stomach is unable to pass its contents into the intestine at the normal rate. Although this condition has long been recognized, it has not received sufficient study, and great confusion still exists concerning its significance. By some authors it is classified as a purely nervous disorder; by others as a form of gastrectasia; some pass it by in a cursory manner.

Kussmaul[1] was among the first to make a distinction between atony and dilatation. He showed that in gastrectasia due to stenosis of the pylorus or of the duodenum, vomiting is very frequent during the entire course of the disease, and is a characteristic sign, while in atony it rarely occurs. Oser[2] attempts to distinguish between dilatation and atony, and states that in actual dilatations lavage is of great benefit, but that in atony it is of little service. Naunyn[3] lays stress on fermentation in dilatation of the stomach, and shows that in muscular insufficiency fermentation is usually produced. Minor forms without fermentation, he believes, should be excluded from the chapter of true gastrectasia. Germain Sée[4] likewise distinguishes clinically between dilatation and atony. Von Pfungen[5] has published a monograph devoted to this subject. He distinguishes the condition not only from gastric neuroses but also from gastrectasia.

For clearer views concerning this subject we are much indebted to Boas.[6] In his recent work on *Diseases of the Stomach* he describes this disorder at length, devoting a special chapter to it as a separate pathologic condition. He suggests the name myasthenia (muscle-weakness) as being more appropriate than atony or muscular insufficiency.

As regards causation, atony may be of two kinds —primary and secondary. Primary atony is found in persons who have been in the habit of consuming large quantities of indigestible food; the excessive use of fluids especially predisposes to this disorder; frequently, however, no such cause is assignable. Atony may be secondary to many other diseases, such as those of the brain and cord, typhoid fever, anemia, tuberculosis, and diseases of the gastro-intestinal tract, such as gastroptosis, enteroptosis, chronic gastritis, and nervous dyspepsia. Cholelithiasis is not an infrequent cause (Boas[7]). I have found gastric atony of rather frequent occurrence in diabetes. According to Peyer,[8] it is often found as a neurosis second-

[1] Read at the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland (Annapolis), November 23, 1893.

[1] Kussmaul: "Peristaltische Unruhe des Magens," Volkmann's klinische Vorträge, 1880, No. 181.

[2] Oser: Ursachen der Magenerweiterung, Wiener Klinik, 1881.

[3] Naunyn: "Verhältniss der Magengährungen zur mechanischen Insufficienz." Deutsches Archiv für klin. Medicin, Bd. xxxi, 1882, S. 225.

[4] Sée: "De la Dilatation atonique de l'Estomac," Revue de Médecine, 1884, 529.

[5] Von Pfungen: "Atonie des Magens," Klinische Zeit und Streitfragen, Wien, 1887.

[6] Boas: Specielle Diagnostik und Therapie der Magenkrankheiten, II. Theil, p. 59.

[7] Boas; Loc. cit., p. 59.

[8] Peyer: Volkmann's Sammlung klinische Vorträge, 1890, No. 356, p. 3173.

ary to disease of the generative organs in males. Bamberger[1] finds it frequently congenital, and according to Zweifel[2] it is not uncommon in children, due, as he believes, in many cases to improper feeding. Kundrat[3] also finds it in children, and especially among those that have been subjected to many attacks of gastro-intestinal catarrh. Pfungen has shown that atony of the stomach often originates during the period of puberty; it is not improbable that the precocious appetite of this age, leading to the consumption of much indigestible food, is the cause of this disturbance. For the same reason it is not uncommon after typhoid fever. Pfungen[4] relates such a case in a woman in whom atony of the stomach was directly attributable to an attack of typhoid fever. No age seems to be exempt from the disorder, and it appears with equal frequency in males and females.

As to symptoms, most patients complain of a loss of appetite, though in rare instances the appetite may be fully maintained, at least in the first stages. When the condition is secondary to nervous disorders the appetite may even be increased (Peyer[5]). A feeling of pressure or fulness comes on, usually during or after meals, and this is especially marked after the ingestion of fluids. In light forms the distress reaches its height immediately after meals, and gradually passes off during the next hour, to be again aggravated by the smallest amount of food. In severer forms it may be so great as to continue with intensity for hours after meals, and become still more aggravated by the following meal. This feeling of pressure is accompanied by heartburn, pyrosis, eructations of gas, and, rarely, by vomiting. The quality as well as the quantity of the food ingested is productive of the symptom; fluids are most likely to induce pressure. Constipation is almost a constant symptom, and headache of a dull character is frequently present, and may at times lead to actual vertigo. Nervous symptoms of various kinds may be present, such as palpitation of the heart and indefinite pains, and on this account the disorder is frequently mistaken for neurasthenia.

On physical examination the stomach is found to be enlarged, so that the greater curvature reaches to, or below, the level of the umbilicus. Peristaltic and anti-peristaltic movements of the walls of the stomach may occasionally become visible. With but small quantities of fluid in the stomach (from 250 to 300 c.c.) a splashing sound may be produced by quick movements of the patient, or by a series of quick shocks with the fingers upon the abdomen. The boundary of the greater curvature of the stomach may be determined by marking the limit of this splashing, and sometimes when the stomach is dislocated downward, the lesser curvature also. The boundary of the greater curvature may likewise be located by percussion; especially is the method of Dehio[1] to be recommended: he allows a quarter of a liter of water to be swallowed, and the position of the greater curvature obtained by the limit of flatness against the tympanitic transverse colon; by drinking more water the curvature sinks until it reaches the umbilicus. In normal conditions it does not reach beyond this line. In atony, however, with but little fluid it sinks quickly below this limit.

Still more reliable is the method by expansion of the stomach with gas, which may be accomplished by the old method of Frerichs. Carbon-dioxid gas is produced by the ingestion of a teaspoonful of sodium bicarbonate dissolved in a small quantity of water, followed quickly by the ingestion of the same quantity of tartaric acid in water. But it is simpler and better to introduce air into the stomach through the stomach-tube by means of an ordinary double bulb of a spray apparatus. On percussion the stomach will be found to reach to, or below, the umbilicus.

In atony, the stomach is not only enlarged, but its motor function is also markedly impaired, and it does not propel its food into the intestine at the normal rate. The propulsive force of the stomach may be measured by the salol test of Ewald and Sievers.[2] Fifteen grains of salol are swallowed during a meal, and the urine is tested for salicyluric acid at half-hour intervals, beginning one-half hour thereafter, and continuing until the response occurs. Usually salicyluric acid appears in the urine in from forty to sixty minutes after ingestion. It is easily recognized by the violet color produced by the addition of a few drops of a solution of neutral ferric chlorid. The modification of this method by Huber[3] may be employed; according to this the urine is tested for salicyluric acid twenty-four hours after its ingestion, the reaction normally disappearing after this period. In patients suffering with enfeebled motor activity of the stomach, as in cases of atony or gastrectasia, the reaction lasts much longer. Of greater value is the test-dinner of Leube, consist-

[1] Bamberger: "Krankheiten d. Chylopöet. Systems." Virchow's Handbuch, Erlangen, 1855, p. 327.

[2] Zweifel: Untersuchungen über d. Verdauungsapparat der Neugeboren. Berlin, 1874, p. 47, and Centralblatt für die med. Wissenschaft, 1874, No. 59, p. 939, etc.

[3] Kundrat; Gerhardt's Handbuch der Kinderkrankheiten, Bd. iv, ii, p. 368.

[4] Pfungen: Loc. cit., p. 541.

[5] Peyer: Loc. cit., p. 3174.

[1] Dehio: Zur physic. Diagnostik der mechanischen Insufficienz des Magens. Verhand. d. Kongress f. innere Medicin, 1888.

[2] Ewald und Sievers: "Zur Pathologie und Therapie der Magenectasien," Therap. Monatsh., August, 1887.

[3] Huber: "Die Methoden zur Bestimmung der motorischen Thätigkeit des Magens," Correspondenzbl. für Schweizer Aerzte. 1890.

ing of a plate of soup (400 c.c.), scraped beef (60 grams), a piece of white bread (50 grams), and a glass of water (200 c.c.). Under normal conditions the stomach will be found empty in from six to seven hours. Should particles of food be still present after this time the motor function of the stomach is much impaired.

A most important test is the condition of the stomach before the ingestion of food (Boas[1]). If the contents of the stomach be expressed in the morning before the ingestion of food, the stomach will be found entirely empty and free of all food-remains. This is not so in cases of gastrectasia, in which greater or smaller quantities of food will be found. Boas has devised still another test, which I have found of great service. The test-supper of Boas consists of white bread with butter, cold meat, and a large cup of tea. In atonic conditions the stomach will be empty the next morning, but in gastrectasia it still contains food-remains at that time.

The examination of the gastric contents is of great importance. The expression one hour after an Ewald test-breakfast[2] shows large quantities of solid contents, not separating into the characteristic three-layered fluid of gastrectasia,[3] or containing yeast-spores or sarcinæ.

Upon chemic examination the contents show in most cases a normal proportion of hydrochloric acid, pepsin, and casein ferments. According to Boas,[4] at the very beginning of atony of the stomach, through constant mechanic irritation of the food upon the walls of the stomach, an increased acid-production results; in fact the irritation may be so great that even hypersecretion may be produced. A case of this kind has come under my observation. In other cases there may be a condition of subacidity.

The symptoms of atony of the stomach are well illustrated by the following two cases:

Case I.—F. B., barkeeper, thirty-eight years of age, with a good family history, had malaria three years ago, and since then has enjoyed good health. Some months ago the patient was taken "with heaviness in the stomach after eating." The heaviness was soon followed by a sense of severe pressure and fulness after meals. Loss of appetite, nausea, headache, and constipation were also marked. Vomiting has never been present. This disorder has gradually increased in severity, until small quantities of fluids now cause great pressure and inconvenience. The man is rather badly nourished, his mucous membranes are pale, the pulse weak, the tongue coated. The heart and lungs are normal, and the liver and spleen are not enlarged. The stomach is tender to pressure along the line of the linea alba, from the ensiform cartilage to the umbilicus. The greater curvature of the stomach is four centimeters below the umbilicus. By quick shocks a splashing sound can be elicited at this point. Upon swallowing a very small quantity of fluid the splashing becomes much more distinct. By inflation of the stomach with air the lesser curvature is found in normal position, while the greater curvature is four centimeters below the umbilicus. The salol-test shows marked retardation of the motion of the stomach. Seven hours after a Leube test-dinner the stomach still contains large quantities of food. Several examinations of the contents of the stomach before the ingestion of food in the morning show no remains of food. This is likewise the case when a Boas test-supper has been taken the previous evening.

The examination of the gastric contents one hour after an Ewald test-breakfast shows large quantities of food remaining, with an acidity of 70; free hydrochloric acid, 0.17 per cent., and no lactic acid. The urine is normal in quantity, containing neither sugar nor albumin.

Case II.—M. W., a colored washerwoman, twenty-three years of age, a widow, with a good family history, had smallpox when a child, and has since been in good health. Fifteen months ago the patient was seized, directly after meals, with a sense of pressure in the stomach. This was especially severe after dinner; water and fluids are badly borne, and always cause inconvenience. The appetite is usually bad, but at times is increased. Constipation has existed for years.

The patient is a well-nourished woman; the pulse is strong; the tongue coated; the heart and lungs normal; the liver and spleen not palpable. The right kidney is palpable and dislocated to the second degree. The stomach is not tender to pressure. After swallowing but 200 c.c. of water a marked splashing sound can be produced in the region of the stomach, the limit of which is found three finger-breadths below the umbilicus; this is verified by the inflation of air. The stomach is found empty in the morning, Boas' test-supper having been taken the evening before. The examination of the gastric contents after an Ewald breakfast shows large quantities of solid contents, with an acidity of 58, HCl 0.19 per cent. The urine is normal in quantity, and contains neither sugar nor albumin.

Among the frequent complications of atony may be mentioned dislocation of the stomach (gastroptosis), and also of the bowel (enteroptosis), and dislocation of the right kidney. The association of dislocation of the kidney with dilatation of the stomach has been pointed out by Bartels,[1] Müller-Warnecke,[2] and Litten.[3] Litten endeavored to

[1] Boas: Loc. cit., p. 68.

[2] The Ewald test-breakfast consists of an ordinary dry roll and 300 c.c. of water.

[2] An upper brown foam, a yellowish middle layer, and a lower dark slimy layer containing food-particles; bubbles of carbon dioxid can be constantly seen rising to the top.

[4] Boas: Loc. cit., p. 66.

[1] Bartels: Schmidt's Jahrb., Bd. clviii, p. 225.

[2] Warnecke: Berl. klinische Wochenschrift, 1877, No. 30, p. 49.

[3] Litten: Verhand. des Kongr. für innere Med., vi, 1887, p. 223.

demonstrate that dilatation of the stomach may cause the liver to move downward, carrying with it the right kidney. This explanation is accepted by but few. Nothnagel[1] claims that Litten's cases were for the most part cases of atony; though dislocation of the right kidney is quite commonly associated with atony, he maintained that this association is merely a coincidence. It is probable that the atony in these cases is secondary to a gastroptosis. The following case illustrates this condition.

CASE III.—L. O., white, female servant, thirty-two years of age, single, came to the dispensary for treatment. She had been healthy when a child, but for years had suffered with constipation. Four months ago she had taken a large dose of "salts" on two successive nights; for several days this was followed by severe diarrhea, which was checked by medicine, but leaving a great sense of pressure in the region of the stomach, nausea, and heaviness in the epigastrium after eating. These symptoms have been very severe ever since; in the intervals between meals this pressure gradually passes away. In moving in bed at night the patient has noticed a splashing sound in the stomach.

The patient is of small stature, rather anemic, the pulse weak, the heart and lungs normal, the liver and spleen not palpable, the right kidney dislocated; points of tenderness are noted along the linea alba from the ensiform cartilage to the umbilicus; the region of the spleen is also tender to pressure; upon quick shocks with the fingers a splashing sound is heard at a distance of five finger-breadths above and six finger-breadths below the umbilicus. On inflation with air the smaller curvature of the stomach is found five finger-breadths above the umbilicus, and the greater curvature six finger-breadths below. Seven hours after a Leube test-dinner the stomach is found to contain large quantities of food-remains. It does not, however, contain particles of food early in the morning before the ingestion of nourishment; one hour after an Ewald test-breakfast large quantities of solid contents are, however, expressed. The acidity is 60; HCl 0.1 per cent., without lactic acid.

On inflating the colon with air it is found dislocated downward, the upper border of the transverse colon being two finger-breadths below the umbilicus. The urine contains neither sugar nor albumin, and is normal in quantity.

Atony of the intestine is not an infrequent concomitant of atony of the stomach—indeed, both may be present for years, and it may be difficult to tell which is the primary trouble. Of twenty cases of atony of the bowel recently examined by me, fourteen were complicated with atony of the stomach.

Gastric vertigo, the vertigo dyspeptica of Trousseau,[2] which this writer believed to be caused by chronic gastritis, probably depends in most cases upon atony (Boas). I have had a case of this kind under observation for some time.

CASE IV.—M. L., thirty-two years of age, a laborer, of good family history, had been in good health until ten years ago, but since then has had gastric trouble. He has had nausea, headache, great pressure after eating, and constipation. Recently the headache has frequently passed into vertigo, which at times becomes so intense that the man is unable to stand. These attacks of vertigo appear at irregular intervals, days sometimes passing by without them. The patient has become very nervous. The man is a large, well-developed individual, with strong pulse; the tongue is coated; the heart and lungs are normal; the liver and spleen are not palpable; the right kidney is dislocated (second degree); the stomach is tender along the median line from the ensiform cartilage to the umbilicus; a splashing sound reaches a hand's breadth beneath the umbilicus, which marks the location of the greater curvature, as was verified by the inflation of air. The stomach contains large quantities of food-remains one hour after the test-breakfast of Ewald. Acidity 62; HCl 0.149 per cent. The urine is clear, containing neither sugar, albumin, nor casts.

Atony of the stomach must be differentiated from nervous dyspepsia and gastrectasia or (dilatation).

According to Bamberger,[1] the variability and rapid change of symptoms, the presence of other nervous symptoms, the normal and increased appetite, and the absence and rapid disappearance of the gastric disturbance, distinguish nervous dyspepsia from atony. At times a diagnosis becomes very difficult and sometimes impossible. It must not be forgotten that atony is frequently a complication of most nervous disorders.

From gastrectasia, atony is diagnosticated by the absence of food-remains from the stomach in the morning before the ingestion of food; by the absence of the three-layered fluid of gastrectasia, and by the absence of sarcinæ and yeast-spores. There is a marked diminution in the secretion of urine in gastrectasia, but not in atony.

Atony of the stomach is a chronic disorder, and may last for years. It is quite amenable to treatment, and, though the disorder may not be perfectly cured, the patient may be relieved of all suffering. Atony may pass into gastrectasia after years, but this is rather a rare occurrence. Boas[2] has observed but a dozen of such cases.

The treatment of myasthenia depends in general upon its cause. If it is secondary, the treatment must be directed to the primary disorder. The dietetic treatment is highly important. It is necessary that the quantity of fluid taken shall be very

[1] Nothnagel: Verhand. des Kongr. für innere Med., vi, 1887, p. 242.

[2] Trousseau: "Vertigo dyspeptica," Gaz. des Hôpitaux, 1862.

[1] Bamberger: "Krankh. der Chylopöet. Systems," Virchow's Handbuch, Bd. vii, 1, 1855, p. 270.

[2] Boas: loc. cit., p. 67.

small. According to Boas not more than from one to one and a half liters of fluid should be taken daily, though in general larger quantities of milk are contra-indicated; in some cases this food is well borne and proves serviceable. The examination of the acidity of the gastric contents gives us indications for the regulation of the diet. If superacidity exists a meat-diet in general is indicated. To this can be added soft-boiled eggs, with but few vegetables. Butter should be allowed in small quantities. In cases of subacidity the more digestible forms of meat should be allowed in smaller quantities. The vegetable diet may be increased in these cases.

In the treatment of the chronic constipation which accompanies most of these cases, my experience coincides with that of Boas. The use of cathartics is in most cases to be deprecated. The method that I carry out, and that I have seen practised with much success in the polyclinic practice of Dr. Boas,[1] is the proper regulation of the diet. Such substances are given as foods as stimulate the peristalsis of the intestine; for this purpose, Graham bread, fruits, and vegetables are ordered in rather large quantities; to these is added milk-sugar, which may be used twice daily in teaspoonful doses to sweeten coffee or milk, and which thus acts as a purgative.

In other cases of constipation, when the treatment just described proves ineffectual, injections of various kinds may prove beneficial. In three cases I have had excellent results from the use of the oil injections recently recommended by Fleiner.[2]

In atony of the stomach, Boas[3] highly disapproves of the use of lavage. He considers fermentation and decomposition the only indications for this procedure; and inasmuch as these are entirely absent in this disorder, lavage is quite superfluous. In regard to this disorder at least, I am convinced of the truth of this statement.

In two cases in which I have practised this form of treatment, not only was no relief obtained, but the pressure was more marked and persistent than before the treatment was undertaken. Of greater benefit is the use of the stomach-douche, especially in those cases depending upon the various gastric neuroses. Still more beneficial is the use of electricity which may be applied either extra-ventricularly or intra-ventricularly by means of Einhorn's electrode. The best results are obtained by the intra-ventricular method.[4] The tonicity of the muscular walls of the stomach are influenced by the faradic current. Painful conditions are alleviated by the galvanic current, the kathode being used intra-ventricularly, the anode placed upon the fundus of the stomach. To this may be added massage of the abdomen, the effect of which is to increase the peristalsis of the intestine and to strengthen the abdominal walls.

In regard to the medicinal treatment, preparations of strychnin seem to serve the best purpose. Either strychnin sulfate or the extract of nux vomica may be given in pill-form. To allay the feeling of pressure, which is a constant and annoying symptom, the extract of belladonna may be prescribed. When there is a diminished secretion of hydrochloric acid, fifteen-drop doses of dilute hydrochloric acid, given, according to the method of Ewald,[1] several times after meals, is indicated.

In cases of increased acidity, sodium bicarbonate should be ordered after meals. Pfungen recommends this remedy very highly.

[1] Boas: Loc. cit., p. 73.

[2] Fleiner: "Ueber die Behandlung der Constipation und einige Dickdarmaffectionen mit grossen Oelklystieren," Berlin. klin. Wochenschrift, Nos. 3, 4, January 16 and 23, 1893.

[3] Boas: Loc. cit., p. 75.

[4] Einhorn: Deutsche med. Wochenschrift, August, 1893, Nos. 34, 35.

THE TREATMENT OF EXOPHTHALMIC GOITER.

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(Concluded from page 677.)

A REVIEW of the cases is herewith appended:[2]

CASE I.—Graves' disease; enlarged thyroid; marked circulatory disturbance; no exophthalmos; dyspnea; convulsions, originally perhaps epileptiform, but later hysteric.

The cause was found to reside in a neurotic tendency, conjoined with repeated exposure to cold, and sitting in wet shoes during work, at the age of nineteen, culminating in a profound attack of exhaustion, nervous chill, rapid heart-beat, and overwhelming sense of suffocation. From this time on the heart was markedly disordered. There were present, together with several hysterical manifestations, repeated hemoptysis, cough, and progressive emaciation. An alarming attack of blood-spitting sent her to a hospital for four weeks, where she was treated for pulmonary tuberculosis. Soon afterward the urine was suppressed for three days, without pain; then a dark, offensive fluid passed, and gradual recovery followed. Finally, another profound over-exertion, five years ago, brought her under my care. The examination then showed a pale, thin, unmarried woman, aged twenty-three; the respiration from 24 to 30; the pulse fairly regular, from 130 to 135; constant cough, throbbing carotids; pupils widely dilated. There was complete mydriasis, but no lesion of the fundus. The heart was laboring; a loud, musical murmur was heard over the base; the apex-beat was

[1] Ewald: Klinik der Verdauungskrankheiten, Berlin, 1893, ii, p. 221.

[2] Journal of the American Medical Association, April 14, 1888.

displaced downward and outward; *bruit de diable* was heard. The thyroid gland was enlarged, especially the right, and conveyed a thrill to the hand; the neck measured 14¾ inches in circumference; the skin was pale and oily-looking; sweating occurred readily, and chilliness caused distress; the legs were edematous; menstruation had been absent for three years; the bowels were constantly loose; the urine was small in amount, bright-red with blood, and had a specific gravity of 1009; no casts; the knee-jerks were excessive.

Treatment was as systematic as the circumstances would permit: carefully regulated feeding and rest; simple, diluent drinks; iron in the form of Basham's mixture and digitalis; hot hip-baths; belladonna-plasters over the excited heart; later, cod-liver oil and bromids with digitalis. In a week the pupils became responsive to light, the cough greatly moderated, the urine was only smoky, and the heart-sounds better defined. Her circumstances at home were exceedingly unfortunate; dominated by a fierce virago of a stepmother, and perpetually under distressing domestic environment. However, in six months the girl seemed practically well. Twice since treatment the pupils have been widely dilated on catching a slight cold, and once only the urine showed albumin again. The menstruation has appeared twice; the pulse has been reduced to 85 or 90 in the erect posture.

The subsequent history of this case I followed throughout three or four years at varying intervals. Electricity was used for a time, but she would not continue it. General measures directed toward improving her health and relieving her troubles, domestic and physical, were satisfactorily pursued, and when the girl passed out of sight, I think by moving to a distant part of the country, she considered herself perfectly well of the original difficulty. The skin-activity returned until nothing was left to mark the original seat here but a slight tendency to leakiness. The pulse maintained a fair equilibrium, the thyroid enlargement had entirely disappeared, and I regard the case as cured, in spite of the very unfavorable attendant circumstances. The woman made a very unfortunate marriage with a man who drank and who abused her. She lived with him for six or eight months, then finally abandoned him, and took up several different kinds of laborious work, maintaining herself comfortably. At last accounts, in the year 1891, she was going to live with relatives in a distant place.

CASE II.—Mrs. H., aged twenty-eight, gave no neurotic history. She had two living children; there was marked exophthalmos, with the presence of Von Graefe's sign; irregular, excitable circulation; steady loss of vigor; slight, though well-defined, thyroid enlargement. She had been under my observation since 1881. The difficulties for which I originally treated her had to do with menstrual derangements and great dyspnea; the pulse varied constantly with the smallest emotional changes, and slight exertion caused it to run up to nearly 200 and produce distressing trouble with the breath. This lady was in comfortable circumstances, but, nevertheless, her responsibilities as a mother could not be entirely ignored—certainly she would not obey directions as I would have liked—nevertheless, I enforced as much of systematic feeding, rest, and other measures as possible. The medicinal measures consisted chiefly of digitalis and ergot, together with iron and other tonics, and in six or eight months there remained only the dusky, oily skin, the eye-symptoms and the lid-symptoms, and a somewhat irregular heart. Relapses occurred now and then, but in the main steady improvement took place, and was greatly increased, I am inclined to think, by carefully adjusted glasses, immediately after which the exophthalmos materially lessened.

It is interesting to mention that although a distinguished obstetrician, whom I had in consultation with this lady, pronounced it impossible for her to bear a living, healthy child again, yet I subsequently delivered her at term of three fine children, each of which she suckled for a full year, and at the time of the report then given there was no heart-trouble and no goiter. This lady has been under my observation ever since. She has grown stronger year by year, and is to-day a more vigorous person than when first married.

CASE III.—Well-marked Graves' disease; extreme nervousness; cardiac distress; exophthalmos; thyroid enlargement.

Mrs. R., aged thirty-six years, married, with one child, at the age of thirty-four seemed in perfect health. She weighed 130 pounds, and was surrounded by every luxury and care. She had sustained no shock or fright and had suffered no exhausting disease. While sitting in perfect health in a theater she suddenly had, from no known cause, a nervous chill, and from that time her disorder rapidly grew. The chills recurred frequently, changing to what she described as waves of feeling up and down the body. On the slightest exertion a sense of constriction in the chest and sweating of the skin would occur. The bowels were loose; the sleep broken, the woman lying awake for hours with a feeling of deadly fear. She had fallen to 110 pounds in weight, and presented a frightened, restless expression. The eyes were slightly prominent; Von Graefe's sign was present in slight degree; the cornea was injected. The voice and hands were tremulous on movement, and there was a general restlessness of manner. The carotids throbbed and the pulse was from 125 to 135 in the recumbent posture. An irregular, loud, musical murmur was heard in the precordia. The skin was bronzed and glistening, the hands and feet chilly. The enlargement of the thyroid was symmetrical, coneying a thrill to the hand. Some improvement followed rest and tonics. After passing from under my observation she fell into the hands of a gynecic surgeon, and, under a slight operation, suddenly sank and died. No autopsy was allowed.

This case is interesting from the sudden, unexplainable onset, there being literally nothing upon which to place the finger, except the sudden chill,

as stated, and the progression of the disease. The nature of the disturbance was not recognized or treated, and my recollection of the case is quite vivid. The family physician had urged "gentle exercise, simple food, and change of scene." I had an opportunity of seeing the woman for only a very short time, while she was under the care of Dr. Weir Mitchell, who endeavored to do what could be done, but for some reason or other she passed over into the hands of the surgeon, as stated. Persistent careful treatment in the right direction would probably have saved this woman for many years of useful, comfortable life.

CASE IV.—Graves' disease; slight exophthalmos; slight thyroid enlargement; irregular cardiac action; delusions; rapid loss of flesh; began a year previously to lose flesh rapidly during a severe dysentery; aged thirty-nine; had had ten children in rapid succession.

The symptoms present were slight delusions; vertigo; prominent eyes; injected corneal vessels; restlessness of expression; tremor of voice and hands; clammy and glistening skin; dyspnea; thyroid enlargement; noisy musical cardiac murmur; no valvular defect; very emotional; albumin and muco-pus in urine. The case was sent to me as convalescent by Dr. Mitchell.

General treatment was pursued, with systematized rest and tonics. The woman gained forty pounds in three months and seemed to be in perfect health, barring a readily disturbed emotional balance and a not yet very vigorous heart. The subsequent history, of which I knew something for many months, was to the effect that this gain was maintained and no relapse occurred to my knowledge, and had it done so, I should almost certainly have known it.

CASE V.—Graves' disease; slight exophthalmos; thyroid enlargement, the neck being fully an inch and a half fuller at the base than normal; slight cardiac disturbance; tremulous voice; recovery; still under observation, and perfectly well.

Miss R., aged twenty-five, presented no neurotic history. One sister has some valvular defect of the heart, but seems now to be fairly well. This patient at ten years of age had enteric fever; at eleven severe dysentery, after which she was long in regaining her health. She had had much headache until the age of nineteen years, when an illness occurred, accompanied by neuralgia in the face and profound prostration. Then she noticed rapid breathing on slight exertion. The eyes were soon remarked as being "curious-looking." She tried to gain strength by exercises in the open air. In March, 1882, she consulted Dr. Seguin, who pronounced the affection Graves' disease and gave an unfavorable prognosis. At that time there was edema of the legs. Digitalis and quiet were ordered. In the following November the woman grew better, after having been partly in bed for several months. In December, 1883, she saw Dr. Gray, of Utica, who also pronounced unfavorably, and relieved an increasing diarrhea. From May, 1881, to May, 1884, the woman menstruated only twice; thereafter irregularly until 1887; since then she has been fairly regular. Her weight was about 135 pounds; the skin was leaky; the lip and voice tremulous; Von Graefe's sign was present in both eyes; the pupils were normal; the corneal vessels were much injected; the woman flushed readily—a rather unusual feature; she was rarely pale; the heart was tumultuous; there was no valvular defect; the pulse intermitted one beat in three or seven; the thyroid enlargement was symmetric; there was well-marked thrill; a loud bruit could be heard in the right neck; there was subjective buzzing in the back of the head, and frequently a throbbing in the back.

The patient was placed upon systematic treatment with regulated living, digitalis, belladonna, tonics—iron, etc.—and attention to the skin, and for periods of from three to six weeks, two or three times applications of galvanism were made to the thyroid and the heart. The urine was found loaded with uric acid, and simple measures directed to this difficulty always produced marked relief. My report of 1888 goes on to say that the improvement was very marked at that time. The eyes had been examined by Dr. de Schweinitz, who found a slight hypermetropic astigmatism, but no lesion of the fundus.

The subsequent history of this case, which is still under my observation, is, I think, interesting, and consists briefly in a pursuance more or less regularly, of the various measures already described, including galvanism two or three times a year, for periods of from a month to six weeks, and until the last year or two. Instead of the belladonna, I found that hyoscin hydrobromate was a much more useful remedy, and as the strength grew I systematized the use of exercise, both for the eyes, the mind, and the body, and the improvement has been uniform and more rapid of late, and now this lady declares herself to be perfectly well, and nearly as strong as most people. The intermittent action of the heart has almost entirely ceased, although the organ is still irritable. I recently listened to her heart, and there was a beat or two omitted in about 250 or 300 beats. Slight exertion did not seem to increase this, although starting her heart into a more rapid activity than perhaps a normal heart would show. This lady can walk up and down hill for five or six miles without distress—indeed, with comfort. She lives an ordinarily useful life of a single woman of comfortable means. The exophthalmos has entirely disappeared. There is still an excessive injection of the corneal vessels, and the skin has almost regained its tone. A very recent letter describes her condition to be that of a perfectly well and thoroughly happy woman.

CASE VI.—A girl of twenty-four, with a decidedly neurotic family history, and whose mother was queer, presented well-marked Graves' disease. The cause seemed to me to be an attack of dysentery three years previously. This was followed by alarming heart-symptoms, vertigo in sitting or walking, profound weakness, dyspnea, extreme nervousness, poor sleep, sweating skin. There was also much intolerable itching, roaring noises in the head, and edema of the legs. In March, 1886, the thyroid

enlargement was observed; in May the exophthalmos; then developed the full picture of injected sclerotic, puffed lids, bloated face, livid, greasy skin; thyroid enlargement in three directions, mostly on the right. The heart-sounds were clear, with a heaving impulse, and a systolic murmur. The pulse was regular but frequent; the bowels were loose; the voice was tremulous. The eyes, carefully refracted by Dr. Hansell, showed some accommodative defects, but no lesion of the fundus. The urine was albuminous. The patient had pronounced delusions. No improvement has taken place up to date.

This young woman would submit to no regular treatment. She was practically insane when seen, and grew exceedingly religious, and tried to become a nun, but the Sisters rejected her. She fell into a condition that I should judge was one of religious melancholia, although I saw little of the case, except from time to time, learning of it chiefly through her sister. The girl is now in an insane asylum.

CASE VII.—A girl of sixteen, and a sister of Case VI, presented thyroid enlargement, with a very irregular heart, no exophthalmos, a leaky skin, chilly extremities, roaring in the ears. The heart-sounds were quick and feeble; a muffled bruit was heard over the right clavicle and through the thyroid, also a marked thrill. The carotids pulsated visibly. The girl's appearance was pale and cadaverous.

This girl was treated as well as the circumstances would allow, her necessities requiring that she should labor daily for her maintenance. She refused to submit to much treatment, which she pursued irregularly, with steady improvement however. I learn that she is now pretty well. The greatest relief was had from hyoscin hydrobromate, which controlled the nervousness and vascular irregularities.

CASE VIII.—Mrs. S., aged forty-six, presented marked exophthalmos, with pronounced thyroid enlargement, and Von Graefe's sign distinctly. Her trouble began five years previously, after a financial shock and an attack of typhoid fever. The latter was followed by an abscess of the abdomen, and this was opened in two places.

The woman was mentally depressed, had diarrhea, roaring in the ears, irregular menstruation, which soon after the beginning of her trouble ceased altogether. She was strongly built; her skin was muddy and dusky; the left eye was exceedingly prominent, the right less so; Von Græfe's sign was present in both eyes; the carotids throbbed; the heart-sounds were clear, and a distinct slight bruit could be heard; the pulse was irregular and frequent. After eight or nine months of treatment, consisting in the administration of digitalis and iron, and large doses of belladonna, the woman was greatly improved. She is still under my observation. I used so much of systematized measures as her circumstances will allow, but this was not much. The vascular disturbances are best controlled by hyoscin hydrobromate, strychnin and other tonics being occasionally used. The chief feature in her case is mental depression, slight melancholia readily setting in after any unfavorable news or distressing circumstances, to which, unfortunately, she is frequently subjected. There was, in addition to the trouble described, a considerable catarrhal disorder of the upper air-passages, which received careful treatment. I have seen this patient within a few days, after her return from a trip to Florida, undertaken for her health, and she now seems in all respects a perfectly vigorous, active woman.

CASE IX.—Mrs. J. S., thirty-nine years old; married sixteen years, with no children; a good family history, and of stationary weight; had had headaches of varying intensity all of her life; she has had no serious illness. Menstruation was regular. She suffered with flatulent dyspepsia and irregular bowels, with loose, frequent, slimy stools. Sleep was only fair, being disturbed by bad dreams. The headaches, which had persisted since childhood, were usually relieved by sleeping, and in the morning were localized to the back of the head. This pain was greatly increased on leaning forward, and if this attitude were persisted in, vomiting would often result. The eyes were never comfortable. The woman could not sew or read at night without greatly increased pain. There was also slight lateral nystagmus. The skin was characteristically flabby; frequent flushes were felt; the countenance was anxious; the tongue tremulous and marked by the teeth; there was a vibratile tremor of the voice; the neck was markedly enlarged on the left side; the heart-sounds were feeble and a musical bruit could be heard. The pulse was from 140 to 150 in the sitting posture; its action was irregular. There was great dyspnea on exertion or excitement.

The treatment consisted in the administration of hyoscin hydrobromate, in small dose, every two or three hours, till the skin became drier. Galvanism was applied to the neck, the mode of living regulated, and more rest enjoined. In a week the headache was less than for many years; in two weeks it was entirely gone. Iron was then given with strychnin. In two months the woman was able to resume her labors, and in six months she was scarcely recognizable.

CASE X.—Mrs. S., twenty-four years; married one year, with no children; as an infant was rather weakly. She had scarlatina at ten years of age, and thereafter had a slight swelling of the neck. Her general health then remained good, and at the age of seventeen she weighed one hundred and twenty-eight pounds, and was so circumstanced as to be compelled to do a large amount of hard work on a farm. This necessitated general and prolonged physical exertion, competent observers estimating it as the work ample for three individuals. This was kept up for two years and the woman then began to run steadily down. To the influence of this excessive labor I think may safely be ascribed the development of the malady. For four years this excessive work was kept up and soon afterward she was married. In December, 1889, she had a sharp attack of influenza, with cerebral and laryngeal symptoms. Subsequently marked dyspnea appeared and persisted. Headaches had been a life-long trouble, but six months before coming under observation she had been properly refracted. The

headaches thereafter almost, but not entirely, disappeared. Menstruation was usually regular.

The woman was tall and spare. There was very slight prominence of the eyeball. The skin had a characteristic pasty, leaky look; the hands and feet sweat readily. The heart was rather irregular in action, and a loud systolic murmur was audible over the aorta and the right clavicle; the pulse was 100 and more in the sitting posture. The tongue was clean; the appetite was capricious. Both lobes of the thyroid gland were enlarged.

Galvanic electricity was employed for a fortnight only. Then hyoscin hydrobromate, $\frac{1}{400}$ gr., was given thrice daily. Rest in bed was enjoined, together with a careful diet. Rapid improvement followed.

At the present writing the woman is in the fifth month of pregnancy, and quite stout and vigorous. The pulse is 85 in the sitting posture. The thyroid enlargement is probably greater than before. Therapeutically, the patient is taking a dry extract of thyroid gland.

CASE XI.—Mrs. N. K. S., thirty-three years old. Her parents are living; her mother suffers with rheumatism, and presents chalky deposits. The family history is otherwise good. The patient is the first child; the labor was normal; she was carefully fed; she had whooping-cough and chicken-pox in infancy, and measles, diphtheria, and pneumonia later. An attack of pink-eye three years ago seems to have injured her myopic eyes. The patient was never robust, convalescing slowly from illnesses. She was always nervous. Two years ago she had a mild attack of chorea. As a schoolgirl she was excitable and easily worried. She menstruated at fifteen, and quite regularly until a year ago; the flow is now rather scanty; six years ago there was amenorrhea, probably from anemia, with swelling of the lymphatic glands on the posterior aspect of the neck. The woman took up teaching seven years ago, and kept it up for five and a half years. Two years ago she had a sharp attack of influenza, which left her in a very nervous condition. She continued teaching, however, for six months, and then was married, about eighteen months ago. She seemed very well then until the spring of 1892, when nervousness set in again, partly as a result of the strain in nursing her ill mother. This caused evil dreams at night, and fear of thunderstorms, etc.; she has been getting gradually more nervous and hysterical; she has never been pregnant.

The patient is a rather small, dark-complexioned woman, the hair streaked with gray, the expression anxious, the eyes prominent, and the pupils responding well to light and in accommodation. She is highly myopic; vision O. D. = 20/CC; O. S. = 20/C. The ophthalmoscopic appearances are not unusual; there is a slight posterior staphyloma. The chest is shallow, the respiratory sounds feeble, the heart irritable. A rapid clanging is audible, but no murmur. A venous hum is heard in the neck, and propagated down the sternum. The thyroid not very large but pulsates visibly; it presents no thrill. The pulse is 100; the skin is very leaky, especially upon the hands, and this condition is aggravated by excitement. The station is good; the gait is irregular. The knee-jerks are exaggerated; there is no clonus. The voice exhibits the characteristic vibratile quality. The treatment consisted in rest in bed; massage; hyoscin hydrobromate, gr. $\frac{1}{400}$, four times daily, and increased as needed.

Two weeks later the headache had almost entirely disappeared; the nausea was much more tranquil; the digestion was good; and she was sleeping quietly. She was then taking $\frac{1}{200}$ hyoscin hydrobromate t. i. d. In the third week the hyoscin was withheld, and a tonic given in the form of elixir of iron, quinin, and strychnin. In the fourth week the woman regarded herself as well; her temperature was normal; she began gradually to sit up. She remained at the hospital forty-three days, and was discharged as cured. She had greatly increased in weight, vigor, and equipoise. The temperature followed the characteristic curve. At the present writing the patient continues well.

PRELIMINARY NOTE ON THE EFFECT OF MASSAGE ON THE BLOOD-COUNT.[1]

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WHILE the manipulations of massage have always been said to increase the circulation and promote the movement of blood, it has never, I think, been definitely ascertained what the exact effect upon the blood itself is. In the examination of some recent cases I have had results so startling and so new that I thought them of sufficient interest to justify brief mention to the College to-night, and in advance of the fuller study on which I have already entered.

In the first case, a patient the subject of a very chronic lead-poisoning from drinking-water, with marked anemia, the blood was examined three times before any massage was practised, and the counts were, respectively, 3,725,000 red corpuscles to the c.mm., 4,000,000, and 4,100,000. The percentage of hemoglobin was always the same—a little over 30. On the fourth day careful massage of the abdomen alone was applied, lasting twenty-five minutes. Ten minutes after the ending of the manipulation I examined the blood, and found the red corpuscles 4,500,000, and the white corpuscles, which had previously not been in excess, as 1 to 85 red. The percentage of hemoglobin was not measurably increased. On the fifth day, after general massage lasting one hour, the count showed 6,500,000 red corpuscles, and the same percentage of hemoglobin.

In the second case, a woman from Mississippi, aged forty-two, with a very pallid appearance, decided malarial cachexia, and slight enlargement of the spleen, the first count, made before massage,

[1] From notes read before the College of Physicians of Philadelphia, December 7, 1893.

was 4,700,000, and the hemoglobin 70 per cent. The white corpuscles on this occasion, two hours and a half after the meal, were in the ratio of 1 to 120 red. After one hour's general massage the number of red corpuscles had increased to almost exactly 7,000,000, and the number of white had a ratio of 1 to 38. No further examinations of this case were made on account of the supervention of the patient's menstrual flow.

The third patient, a healthy adult, had a count before massage of 5,675,000, and 110 per cent. of hemoglobin, with no excess of white corpuscles. After massage the red corpuscles were 7,900,000, and the hemoglobin fully 120 per cent. I could not find in this case that there was any excess of white corpuscles, but I had the opportunity of making but one examination, and did not use the only satisfactory method of counting these corpuscles, *i. e.* by a separate examination with a 5 per cent. solution of acetic acid.

The fourth case was one of suspected early locomotor ataxia in an adult male, who, for some weeks had been in hospital under daily massage treatment and quiet, with good food. He had not been rubbed for three days previous to the examination. His count before massage was 6,575,000 red corpuscles, and hemoglobin 110 per cent. At a second examination, on another day, the count was 7,325,000 red corpuscles. On the same day, after massage, he had 7,340,000, a very small increase, and no increase in the amount of hemoglobin.

The fifth case was in a boy of fourteen, who had transverse myelitis, in course of recovery, and had been daily rubbed for some weeks. His count before massage was 6,900,000, with 90 per cent. of hemoglobin, and after massage 8,100,000, with 100 per cent. full of hemoglobin.

I should add that for several of these examinations I am indebted to the kind assistance of Dr. Charles W. Burr, who used a different instrument than mine. They were all made at about the same hour of the day, and, so far as possible, with similar conditions surrounding the patients—a matter of some importance when we recall the great changes that take place in the number of red and white corpuscles in the veins at different hours of the day and in different relations to meal-times. Bernard, indeed, showed that the total amount of blood was so much increased during digestion that an animal could be bled to a greater extent without injury after feeding than before.

This effect of massage does not seem impossible when one recalls how the bloodvessels look when seen in a frog's foot under the microscope. In the lesser capillaries there appears, every now and then, to be a clogging, and, for a time, the corpuscles scarcely move. When this state is overcome, a like condition is evident in another little vessel. Even in larger vessels, many corpuscles seem not to share in the general movement, and to be temporarily out of the current; the white ones especially cling along the walls, and some of the red ones progress less rapidly than others, or linger for an instant as if they were in an eddy or a side-current; it is probably literally true that there is a "side-current," the serum nearest the walls moving more slowly than that in the central stream. A portion of the blood, therefore—and when the whole capillary system is taken into account, it must be a large portion—is not at all times in active circulation.

It is easy to imagine that the alternate compression and expansion of the veins and arteries during deep massage, and the consequent pumping of blood through them, must push many of the corpuscles that are lingering in the by-ways of the circulation into the full stream of the blood-current, and make a demand upon the various reservoirs and factories of red and white corpuscles for further supplies to take their places.

While, as I said at first, the number of cases is too small to make certain the constancy of this very remarkable change after massage, it seems to me of sufficient importance to justify this imperfect preliminary statement. Even so far as it has gone, it suggests matters of novelty both in physiology and in clinical medicine.

CLINICAL MEMORANDA.

A CASE OF COMPRESSION OF THE BRAIN.

BY A. F. HARRINGTON, A.B., M.D.,
OF WEST POINT, GA.

ON the morning of December 26, 1892, I was called to see a negro man, twenty-seven years of age, who at 8 o'clock of the previous night had been struck above the right ear with a stone. I found the patient suffering with a dull headache; there was a contusion of the soft parts above the ear, but I could detect no fracture or depression of the bone. Some dried blood was found in and around the external auditory meatus. The man was perfectly conscious and got out of bed during my visit to void his urine. The only evidence of any paralysis whatever was a very slight difficulty in phonation, and this was hardly perceptible—a little stammering in articulating certain words. The pulse was 64, the temperature normal.

The symptoms pointed to some compression. The areas localized as supplying the larynx were rather anterior to the external injury to the soft parts, yet the existing partial aphonia led me to believe that hemorrhage from a ruptured artery was causing pressure of the speech-center. Being in doubt as to the advisability of trephining I decided to await further developments, ordering a laxative dose of Epsom salts and potassium bromid to quiet restlessness. For four or five days no further symptoms

arose, but the headache still continued. The patient seemed in better spirits and more contented. During this time, without my permission, the man was moved, sitting up in a buggy, to a house one mile away. I was hurriedly called on the morning of January 2d, to find him apparently unconscious, bathed in a profuse and cold perspiration, having convulsions of one minute's duration, occurring every fifteen minutes. During the intermission all of his muscles were tense, the pulse soft, and 125 per minute. The pupils were unequal in size, and irresponsive to light. There was total aphonia, and deglutition was impossible. These symptoms had suddenly made their appearance about 12 o'clock of the previous night, and had rapidly increased in severity. The convulsions occurred more and more frequently, were severer and of longer duration. The man died at 3 o'clock of the same day.

Upon removing the top of the skull, postmortem, I found the inner table fractured at the site of the injury, and a blood-clot two inches in diameter extended forward and upward. All of the meninges were congested. The clot was directly under the bone. The outer table of the skull was perfectly intact.

My sole object in reporting this case is to illustrate the folly of waiting in head-injuries, when symptoms of compression, however slight, exist. I did not operate at once, because I thought the symptoms did not warrant such a radical procedure; when last called no operation was undertaken because the patient was moribund. Whenever there is any compression the symptoms will increase in severity. We cannot expect amelioration unless the cause is removed, and only an operation can do this. Lifting a depressed bone and removing a clot are all that is needed. With antisepsis and due skill the brain can be operated on with impunity. Why then should we allow the formation of a clot to continue until the brain-resistance is overpowered? The surrounding bony wall can never give way—the delicate brain must. Then why not consider *any symptom* of compression an indication for the immediate use of the trephine?

THE TREATMENT OF BLEPHARITIS MARGINALIS BY HYDROGEN DIOXID.

BY S. C. AYRES, M.D.,
OF CINCINNATI, OHIO.

THE treatment of blepharitis marginalis is often unsatisfactory and disappointing. Relapses frequently occur, and remedies seem to lose their effect, and at times even to act unfavorably. It is true that much of our success depends on the faithfulness of the patient or of his parents in carrying out the treatment at home. Much also depends on the physical condition of the patient, and this should always receive careful attention. Anomalies of refraction seem to play an important rôle in perpetuating the disease, and these also should be carefully corrected. But aside from these considerations, the treatment is often prolonged, taxing the patience of the physician as well as of the client.

The remedies prescribed for the relief of this disease are numerous, and all have met with more or less success. During the past year I have used with great satisfaction hydrogen dioxid in the treatment of this disease. I was led to its use by some experiments in cases with suppurating rings around the cilia. After removing the crusts and applying the dioxid, there was a bubbling and boiling effect for a while, which soon subsided, leaving the ulcerated surface whitened, as if a solution of silver nitrate had been used upon it. The application was almost painless, and the lid was left clean and free from pus or scales.

These experiments were followed by a general adoption of this method in nearly all cases, but especially in those with ulcerations along the lid-margin. My experience in a large number of cases justifies me in recommending this treatment, so that others may give it a trial. The manner of its application is as follows: The larger crusts should first be removed or scraped off, after having been softened by tepid water. Then a little cotton is wrapped tightly around a Japanese tooth-pick, which is dipped into the dioxid in a little dish. The cotton is then swept over the entire edge of the lid. The characteristic bubbling will follow, and the application is repeated until the bubbling ceases. The ulcers will then present a whitish appearance. If care is taken, and the cotton is not too freely saturated, none will come in contact with the conjunctiva. In order to obviate all pain, a few drops of a 4 per cent. solution of cocain can first be instilled into the eye. This treatment should be repeated every day. The remedy is one that any intelligent person can apply at home, and one from which there is no danger. My experience with the use of salves and ointments is somewhat disappointing. They often cause unaccountable irritation, and on this account are unreliable. In the method advised a clean remedy is used, which acts promptly and efficiently. By its chemic action it destroys the germs which cling so closely to the edges of the lids. It is not a cure-all or a specific, but I certainly have had the happiest results from its use.

MEDICAL PROGRESS.

Gastrotomy in a Case of Carcinoma of the Esophagus.—At a recent meeting of the Philadelphia Academy of Surgery, KEEN reported the case of a man, forty-eight years old, in which for thirteen months there had been gradually progressive interference with deglutition, so that at the time the patient came under observation he was able to swallow only liquids. The taking of nourishment was followed by a sense of impediment at a point corresponding to the left sterno-clavicular articulation; then the food would pass with comparative ease until it reached a level corresponding to a point half an inch above the lower extremity of the ensiform cartilage. At the latter point distinct obstruction was felt, and the passage of food was attended with darting pain in the median line posteriorly, below the inferior angles of the scapulæ (though more pronounced upon the left), in the epigastric region and in the precordium. Several slight attacks of hematemesis had occurred, and on one occasion quite a considerable loss of blood had taken place. Forty-eight pounds in weight had been lost during thirteen months. There was no history of traumatism, of the ingestion of corrosive substances, of syphilis or of alcoholism. The passage of an esophageal bougie was attended with resistance at a point ten and

a half inches from the teeth, and absolute obstruction was encountered at a distance of twelve inches. It was decided to perform gastrotomy, and the operation selected was that devised by Witzel.

An incision, four inches long, beginning at the middle line and running to the left, a finger's breadth below the border of the ribs, was made, and the fibers of the rectus muscle were separated by the fingers, but not divided. The stomach was seized with two fingers and brought forward and outside the wound, the margins of which were protected with gauze. A rubber tube, five inches in length (size 25, of the French scale for catheters), was introduced into the stomach and infolded by two rows of Lembert sutures. The opening in the stomach was made toward the cardiac extremity, and the tube lay parallel to the external wound, its external extremity emerging near the median line. Three stitches were now inserted into the walls of the stomach, but not tied until the organ was returned to the abdomen, their needles being left threaded. As soon as the stomach was returned these needles were thrust through the abdominal wall and the stomach was brought up to the margin of the opening. The tube was held in place by a catgut stitch passed through the wall of the stomach and through a part of the wall of the tube without obstructing its caliber. About one inch of the tube was thrust into the stomach. The edges of the abdominal opening were now approximated by silkworm-gut sutures and the ordinary dressing was applied. A clip was placed on the tube to prevent the escape of the contents of the stomach.

The patient made an excellent recovery, without incident, excepting in one respect. On the second day after the operation the dressing became twisted in his movements in bed, and the tube was pulled out of the stomach. In order to replace it, it became necessary to cut three stitches in the external wound. When the tube had been replaced these stitches were re-inserted. Apparently, however, such adhesion had formed that no harm was done by this accident excepting to delay the closure of the wound. After a lapse of six or seven weeks the man began to expectorate some bloody mucus, presumably coming from the ulceration of the carcinoma in the esophagus. He had gained about four pounds in weight. Immediately after the operation he was fed for two days by rectal enemata. Then small amounts of milk were poured into the stomach through the tube. This feeding was gradually increased until the daily food consisted of two quarts of milk, about twenty ounces each of beef, mutton, and chicken broth, and a dozen eggs. This was varied by substituting gruel, thin custard, and other similar food. The man became able to walk about with much comfort. The tube was held in place by a gauze dressing, which in turn was retained by rubber adhesive plaster on each side, laced through eyelet-holes. No escape of the gastric contents took place alongside of the tube.

The patient was still doing well three months after the operation. There was absolutely no leakage whatever.

Changes in the Blood as a Result of Thermic Influences. At a recent meeting of the Royal Society of Physicians of Vienna, WINTERNITZ (*Wiener medicinische Presse*, 1893, No. 47, p. 1858) reported the results of observations upon the changes that take place in the blood as a result of applications of heat and cold. He had previously found that the application of cold was followed by an increase in the number of colorless corpuscles in the blood withdrawn from the finger-tip or the lobe of the ear. Fifty additional cases were studied for the purpose of observing the influence of thermic impressions upon the number of red corpuscles, the amount of hemoglobin and the specific gravity. It was found that the employment of general thermic and mechanical measures (friction in cold packs, douches, baths, and the like) involving the entire surface of the body, was attended with an increase of both red and white corpuscles, as well as of the amount of hemoglobin. The maximum increase of red cells reached almost 2,000,000 per cubic millimeter; while the colorless corpuscles were trebled in number, and the hemoglobin was increased 14 per cent. The maximum increase was not always observed immediately after the manipulations, but often after the lapse of an hour. The colorless corpuscles began to increase in number at a time when the red cells were beginning to diminish. These changes lasted a variable time; a diminution could be observed two hours after they had begun. The change in the number of colorless cells was less constant than that in the number of red cells; the former were in some cases both relatively and absolutely in smaller number. In some cases the increase persisted. Active muscular movement had a similar, but less decided effect. General applications of heat were attended with a diminution in the number of red cells, followed by a moderate increase. Applications of cold to the lower extremities were followed by a diminution in the number of both red and colorless cells, in blood obtained from the finger-tip or ear-lobe, while an increase was observed in the blood of the parts to which the applications were made. It was pointed out as unlikely that the increased number of cellular elements is due to their new formation, but as more probable that preëxisting cells are hastened into the blood stream as the result of the application of cold, in consequence of a stimulating and invigorating influence upon the heart, and vessels, and tissues; so that blood previously stagnant in various parts of the body is sent to the lungs and, with a fresh supply of oxygen, becomes capable of renewed function.

Variations in Weight in Epileptics.—At a recent meeting of the Society of Biology of Paris, FÉRÉ (*Compt.-rend. hebd. des Séances de la Soc. de Biol.*, 1893, No. 32, p. 891) presented an epileptic who illustrated remarkable changes in weight, such as may often be observed in neuropathic and psychopathic subjects. The patient was a man, thirty-six years old, who had been under observation for seven years, having, as a rule, about six major and three minor attacks a month. During this time he had been generously treated with bromids and with borax, but without avail. Within a period of seven weeks this man gained 2.2 pounds in weight. Then he rapidly put on flesh, gaining 36.3 pounds in the subsequent twenty-six days. Then the man began to lose weight, falling off 2.2 pounds in the course of three days. Throughout the observations the conditions of treatment and diet remained the same.

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MANNABERG'S THEORY OF LAVERAN'S CRESCENTS.

THE recent monograph of MANNABERG on the parasites of malaria (*Die Malaria-Parasiten, etc.*, by DR. JULIUS MANNABERG, Vienna, 1893) forms a very important landmark in the history of malaria, and should materially assist in the study of that disease. The book combines a fairly full and accurate account of the work of previous investigators with the results of original observation in a rich field, and is embellished with a large number of figures, for the most part colored, which, with few exceptions, are superior to most of those hitherto available. The work deserves, therefore, to be in the hands of all who have to do with malarial disease.

One of the most interesting and important chapters in the book is that in which the author details his theory of the nature of the crescentic body, a theory announced by him a year ago, but not widely disseminated. MANNABERG himself says that more research is needed in order to confirm the theory, but already one writer on the relation of protozoa to disease (*British Medical Journal*, October 14, 1893, p. 825) has treated it as one perfectly demonstrated.

To an investigator uncritical acquiescence is a shade worse than absolute silence, especially when a novel statement is involved. Candid criticism, on the other hand, is always welcome, and we propose, therefore, to point out briefly some of the more obvious objections to the theory.

A description of the crescents can be omitted here, but before considering the new theory it is well to say that up to this time only one other can claim wide acceptance. This is the theory entertained by MARCHIAFAVA and CELLI, based on observations by those investigators and their pupils, and published in many articles. For convenience we shall call it the Roman theory. According to this the crescents develop from bodies belonging to the form known as the small plasmodium. Beginning as bodies not distinguishable from others of the same kind—that is, as small ameboid intra-corpuscular forms—they tend at an early stage to grow long and narrow, lying along or near one side of the red corpuscle and finally reaching the crescent shape as found in the blood, usually without, but sometimes with traces of the corpuscle in which they grew. According to the Roman investigators the crescents represent sterile forms and do not produce new bodies. It is true that some early observations of the Roman school seemed to show the occurrence of a sort of gemmation, but in all the later investigations stress is laid upon the sterile nature of the bodies, though it is admitted that complete knowledge is still wanting.

MANNABERG'S theory is that the crescents are *syzygies* or conjugation-forms. Conjugation, complete or partial, is a process common among all classes of the protozoa, though its details have been worked out only in a few instances and are not always uniform. MANNABERG describes it concisely as a process "in which two or more individuals come in contact and become partially or completely fused. In this the structure of the original bodies disappears more or less; especially do the nuclei tend to disappear. Earlier or later a membrane forms around the conjugate body, by which it is encapsulated or encysted. The further change which these conjugate bodies, known to zoölogists as syzygies, undergo is usually sporulation, so that syzygies can be looked on as a sort of sexual propagation of the protozoa."

MANNABERG'S idea that the crescents represent some such body as that just described is based on the following grounds:

"It is well known that a single red blood-corpuscle may contain two or more of the ameboid organisms. These may be separate, or they may lie

by twos, or, less frequently, by fours, close together. Often the adjacent borders of the two bodies cannot be distinctly seen, especially in fresh blood, and especially if, as is usually the case, the pair lie close to the edge of the blood-corpuscle. The bodies under these circumstances are often long drawn out, and lie with their concave edges to the center of the blood-cell. The length of the body and the fact that the chief part of the plasma is at the poles, make the resemblance of such a pair to a crescent very striking, and all that is necessary to complete the picture is a small number of pigment grains."

Notwithstanding these striking facts, says MANNABERG, it would be too rash to assert that the crescents are syzygies, were it not for the existence of other reasons which actually force that view. These reasons are: the limiting membrane of the crescents, their peculiar structure, the formation and arrangement of their pigment, and their segmentation.

These four points MANNABERG elaborates in a manner interesting, but at a length that makes the reproduction of his arguments impossible here.

Enough has been said, however, to show the ingenuity of the theory, and to indicate how plausible it is. From a biologic point of view much more is involved than the origin of the crescent from one or from two ameboid forms, even if it does not appear that the supposititious syzygies undergo sporulation.

Admitting before going further that future investigation may prove the truth of the theory in its entirety or in part, we wish to set out briefly some of the points which should be borne in mind now and during critical observations.

In the first place it seems to us that MANNABERG in two respects lays too much stress on a membrane. Conjugation-forms do not always become encysted; nor is the presence of a membrane evidence that the body having it is conjugate. So far as the membrane of the crescent is concerned it is quite compatible with the view that the bodies are sterile forms, and also with the view long ago expressed by COUNCILMAN that the crescents are a form of "Dauersporen."

Passing by a consideration of the statements regarding the structure and the pigment of the crescents, we wish to say a word concerning the segmentation of the bodies. MANNABERG speaks of sporulation as one of the functions of syzygies, but by segmentation he means a different process, a division in ordinary language, which also occurs in conjugation-forms.

According to MANNABERG, segmentation in the case of the cresents consists in a division in the middle in such a way that "before complete division the two halves hang together like a pair of sausages, a part of the pigment being left in each half." From this MANNABERG draws only the nearest conclusion—that is, that the crescents divide—though he suggests that certain dark granules often found in the dividing crescents have some connection with propagation. This process of division MANNABERG says he has seen "not infrequently," and he further says that GRASSI and FELETTI also mention it. But the reference to the work of the latter is so imperfect that it is impossible to verify it. In a later paper by GRASSI and FELETTI (*Centralblatt für Bakteriologie und Parasitenkunde*, Bd. x, No. 15) the following occurs: "We have at times found figures which almost indicated that the crescents divide transversely, and that then each half divides again. At all events we have so far been able to observe indications only of a reproduction of these bodies." On the whole the work of the observers just named does not harmonize with that of MANNABERG.

So far as the division of the crescents is concerned, as MANNABERG figures and describes it, it does not seem to be more than a mere breaking of the body, which from the peculiar structure of the crescents would seem to be very readily brought about. Regarding this point, however, it should be easy to confirm the observation, and one should look, not for partly divided crescents merely, but for the complete division that MANNABERG describes.

Regarding MANNABERG'S clinical proofs, we have to criticise one point only, namely, the assertion that the new theory explains the relapses that occur in cases with crescents (strictly speaking, with crescents and small plasmodia). Relapses occur in tertian intermittents without crescents, and although, perhaps, not so frequently as in cases with the small plasmodium, neither MANNABERG nor anyone else has claimed that there are essential differences between the relapses of the two forms. The power of the germs of tertian to remain, as it were, latent for a long time in the body is so well known that it would seem necessary to dispose of it before stating that the conjugation theory is necessary to explain relapses of from two to three weeks, as MANNABERG puts them.

If it is ever demonstrated that the crescents are

syzygies, we shall have a good explanation of certain relapses, but argument in the reverse direction is of little value.

It is hoped that the assertions of MANNABERG will call forth renewed investigation in this interesting subject, and especially is it desirable that this country, which offers such favorable material, will take its part in the work. Though we have been, perhaps, led astray by the remarkable figure of the crescentic body, and so have overestimated its importance, its other remarkable characteristics make it well worthy of investigation.

SOCIALISM IN MEDICINE.

NATIONALIZATION and centralization have of late made rapid strides in medicine. The position of the physician as a private person is more and more encroached upon, and it is not an idle speculation or theoretic dream to say that if the present methods continue to increase as they have done in the past, the physician of the future will be an officer of the State or of the city, duly appointed and salaried as such. Little by little the work of attending to the sick is being taken up by the community, whether Federal, State, or municipal in nature, by institutions endowed with public moneys or by private or semi-public corporations. The city officials provide vaccination at the public expense, performing in Philadelphia on an average 11,000 a year, and thrice that number in times of epidemics. The Municipal Hospital of the same city is called upon to admit cases of diphtheria, scarlatina, and measles, and during last year's epidemic 183 cases of diphtheria and 159 cases of scarlatina were treated in its wards. With increased facilities a much larger number will be admitted.

The State already possesses six hospitals of its own, not including the hospitals for the insane. These State hospitals are situated in the coal regions and are supposed to care for the injured miners. If the State attends to the health of injured miners, why not have hospitals for the ironworkers, for railroad employés, and finally for tailors, bakers, and all the rest? All are equally entitled to these privileges. Instead of establishing individual institutions, the State endows those already existing; the last legislature appropriated $200,000 for sixteen Philadelphia hospitals.

There are 35 large hospitals in Philadelphia, having a bed-capacity for 4500 patients, and the total population of these institutions on September 30, 1892, was 2600. The total receipts of 30 of these hospitals, not including the Philadelphia Hospital and the Municipal Hospital, were, for the year 1892, over $1,400,000; the total expenditures for the same period were $1,300,000. Only 20 hospitals received payments from patients, amounting in all to $160,000; for the rest of their expenses they were dependent on public and private charity. Moreover these institutions are in reality not used by the very poor, who must be crowded into the old Philadelphia Hospital. It is chiefly the middle classes that are admitted, many of them belonging to special religious denominations.

Surgery is mostly carried on in institutions. Formerly the young doctor had a chance of being called to attend an accident-case happening in his neighborhood. Many a physician has won his way into a fair practice through the skill shown in such emergencies. But to-day the patrol-wagon or the ambulance is as speedily obtained as the nearest doctor, and the case is whirled off to the hospital. It is treated in the dispensary if a slight case, or sent to the wards or a private room, according as the financial condition of the patient seems to warrant. We have known rich men to pay $25 a week for a private room in a general hospital, and demand extra attention of resident and visiting physicians without ever thinking of remunerating one or the other.

Cases of enteric fever, owing to the more complicated treatment, viz., the Brand method, are more and more coming under hospital supervision, and even the young physician is very likely to send his patients to an institution if he finds it difficult to carry out the details of the treatment at home. There were 2300 cases of typhoid fever reported to the Philadelphia Board of Health in the year 1892; and in THE MEDICAL NEWS of November 25, 1893, Dr. J. C. WILSON reports seventy-four cases treated at the German Hospital in one year. If other large hospitals show similar statistics we deduce that over one-third of all cases of enteric fever are cared for in public institutions.

Specialism is largely attended to by the dispensary clinics. The eye, ear, nose, and throat departments are always crowded, and usually by the better classes. Costly underwear is not infrequently seen in the gynecologic out-patient departments.

The great rivalry existing between the institutions, and the readiness with which the public is willing

to receive something for nothing, whether in need of it or not, make the free dispensary an object of great abuse. The poor, for whose benefit it is supposed to exist, are crowded and tired out by the more leisurely class, who come early and have nothing to lose by waiting. It cannot be doubted that the dispensary greatly injures the family physician, whose advice was formerly asked for and remunerated by a large number who now regularly attend the special clinics. Even obstetrics is becoming institutional, and the eleven lying-in hospitals and schools of Philadelphia attended in 1892 to 1200 confinements.

But not only in practical medicine is this centralization noticed. Scientific experts are in the employ of the Government and State to study disease and how to prevent it, both at home in laboratories and experiment stations and abroad as Government commissioners. If SURGEON-GENERAL STERNBERG's plan of army and navy medical schools succeeds, may it not be followed by a national medical college at Washington, properly endowed by the Government?

If the State now contributes moneys to medical colleges, why shall it not concern itself about the expenditure of such grants, and hence have a voice in the management? It is but one step further to complete control.

But not only will college hospitals be under Government supervision, but likewise all hospitals if they receive financial aid from the public.

The Philadelphia Hospital suffers greatly from want of space, while elegant monumental buildings, erected to glorify some individual, or set of individuals, beg for State aid, and have many of their beds empty. One hospital asked for $200,000 of the State Board of Charities to aid in the erection of a new building—a request very properly refused.

The country physician is likewise beginning to suffer from this centralization. The rich, and even middle class, often go to the nearest city in search of medical, and especially surgical advice. The hospitals usually become their resting-place, but having a letter to the hospital surgeon, the latter usually brings in a bill for his services. One prominent surgeon has stated that were it not for such practice referred to him from the country, he could hardly pay his living expenses.

We see, therefore, that while the family physician first suffered from specialism, both he and the specialist are now suffering from institutionalism and paternalism, and that very soon the only remunerative work in medicine will be that coming from public position, either directly or indirectly. In the meantime the hospital visiting surgeon or physician should demand payment for his services, and if the profession will unite in this demand it must be acceded to, for the hospital cannot exist without the physician.

Private patients should be compelled to pay for medical services, and at clinics and dispensaries some charge for services should be made, except in certain cases. It is as pauperizing to a community to give gratuitous medical service as it is to give free bread.

In every-day practice we are very careful how, by word or deed, we injure the interests of our brethren in the profession. Let us not forget when we become attachés of hospitals that our brother still exists, and that every action of ours countenancing the present indiscriminate methods of squandering medical charities not only greatly injures him, but also pauperizes the recipient and tends to make medicine itself secondary to a board of laymen who receive all the praise and credit.

EDITORIAL COMMENTS.

The Neuritis of Diabetes Mellitus.—Though we do not know the ultimate etiology of diabetes mellitus, the lessons of clinical experience would seem to have demonstrated that the symptoms of the condition are essentially manifestations of a morbid derangement of the bodily metabolism. The obvious inference to be drawn from this assumption is that there is, among other things, either defective disintegration of the saccharine elements of the ingested food, and of those generated within the organism, or excessive production of the latter, perhaps additionally with the retention of certain products of imperfect tissue-change. The seat and the nature of the morbid process are, however, not known. It is true that diabetes mellitus has been observed in association with other morbid processes, such as disease of the nervous system and of the pancreas, but the precise relation between the associated conditions has not been determined. As an indication of the profound consequences to which the derangement of metabolism present in diabetes may lead, beyond the presence of glucose in the urine, we need but point to the coma that determines a fatal issue in a certain proportion of cases. The nutritive depravity is further indicated by the occurrence of various trophic lesions, and by the peculiar susceptibility to tuberculous infection displayed by diabetics. Additional evidence of the circulation in the blood of the toxic products of a perverted metabolism is the occurrence of peripheral neuritis, as manifested by characteristic motor or sensory symptoms. Little attention has been given to this complication, or (perhaps

better) manifestation of diabetes, and not much has been recorded concerning the pathologic changes found in the nervous system after death. In the autumn number of *Brain*, T. DAVIES PRICE makes an interesting contribution to this yet but little traversed field. He reports three cases of diabetes mellitus presenting peripheral neuritis of sensory type, and gives the results of a pathologic study. There were present pains, followed by tingling, numbness, and impaired sensibility, together with ataxia, enfeeblement, followed by abolition of the knee-jerks, but without palsy. In two of the cases perforating ulcers of the feet developed, and in one of these, and in the third, gangrene appeared, leading to fatal termination. In one of the cases the pupillary reactions were enfeebled; in another, a number of otherwise good teeth fell out; one presented lividity, and two an erythematous and edematous condition of the lower extremities. In all three cases there was found, post-mortem, the evidences of parenchymatous inflammation of some of the peripheral nerves, and in one case degenerative changes in the ganglion-cells of the anterior horns of the spinal cord, as well as atheromatous changes in the bloodvessels. We can only interpret these various phenomena to be the result of the presence in the circulation of the toxic products of a deranged metabolism. When we shall have learned more about the influences that induce these morbid derangements we will be in a position to outline a rational therapy or to realize our therapeutic puerility.

Vivisection of Criminals.—No more morbid and shameful perversion of the spirit of experimental investigation has been proposed than DR. J. S. PYLE'S "Plea (*Tri-State Medical Journal*, i, 1, p. 5) for the Appropriation of Criminals (convicts ?) Condemned to Capital Punishment to the Experimental Physiologist." This inhuman fantasy contemplates nothing less than the removal of the laboratory of experimental psychology to the dungeon of the convict, followed by the ardent psychologist and pseudo-surgeon. The convict is assured that his execution is now placed in the friendly hands of the physiologist, representing the medical profession. This death is to be made to add to the knowledge of man, and secure an advance of the curative art. Having been assured that the execution will be devoid of physical pain and the experiences of the gibbet, the convict is anesthetized, and the whole, or part, of the calvarium is removed. The anesthetic is then arrested; and, after any uncomfortable effects which the drug has produced have passed away, and the convict is again in a normal condition, the various "centers" of the brain are "excited," and the convict being in a peaceful and observing frame of mind, recounts his experiences to the stenographer of the occasion, or runs them on to a phonograph. Then the experiments being ended, the hypodermatic needle is used, and the convict sinks into the long sleep under the "stimulation" of the "center" of greatest physical pleasure.

There are men who deny the right of society to take life at all. There are men who are pained at the presence of medical men at executions, and, especially, at the experiments which notoriety-mongers pretend to undertake; but a very much larger class would protest against any law or laws contemplating such an unholy alliance between the laboratory and the dungeon.

The mere suggestion is revolting, and equally unbecoming a medical man and the medical press. The recommendation shows how little the author has considered the standing of the medical profession in the eyes of the community, the rights of man, the conduct of courts, the value of experiments on animals, and the perspective of the needs of life.

The Worst Quack Seeks Medical Authority.—One of the most exasperating and disgusting things about the quack is that in the very same advertisement in which he abuses the medical profession he will in some way claim the sanction or protection of medical science or of reputable medical men. A striking example is furnished by a company hailing from Augusta, Maine, who send out the most astonishing circulars as regards the "cash prizes" gained by their agents, and of the thousands of dollars' worth of "OXIEN" that they are selling. The Company claims the sanction and sails under the certificates of the Mayor, the President of Council, City Solicitor, Postmaster, President of the Board of Aldermen, and all the rest! But in a circular dated November 6, 1893, it is also claimed that the nostrum "is sold under the certificate of the City Physician of Augusta." This struck us as "going too far," and we have before us the letter of the City Physician denying absolutely that he has certified as advertised, or that he knows anything of the cure-all.

As another illustration of the mercantile demands for and uses of "physicians," the following advertisement was clipped from the Philadelphia *Press* of December 11, the year of our Lord, 1893:

"WANTED, A PHYSICIAN to travel with medicine company to lecture; experience not necessary; prefer one who can play organ; a steady, pleasant, and lucrative position offered. Address," etc.

Decrease of Crime in England.—The *Lancet* is responsible for the statement that serious crime is steadily decreasing throughout England. It is pointed out that in the five years ending in 1859, when the population of England and Wales was 19,257,000, the sentences to penal servitude numbered 2589, while in the years from 1885 to 1889, in a population of 27,830,179, the number of sentences was 946. Since the last date named a further decrease has taken place. There has also been a remarkable diminution in the number of young convicts. In 1887 this number was 3.2 per cent. of the total; in 1893 it was but 1.2 per cent. These observations agree with the statement that the diminution in the whole amount of imprisoned criminality is mainly attributable to a decrease in the number of young offenders, the proportion of older delinquents having increased. This result may in great measure be ascribed to the steady growth of a tendency, in the case of young persons, to the discipline of reformatory schools. The wisdom of this course can hardly fail to commend itself. Corrective rather than repressive, it embodies the essence of curative treatment as applied to crime. The substitution of fines for imprisonment, the conditional liberation of first offenders and the abolition in many cases of imprisonment for debt are measures of a like tendency, agreed in their purpose of obviating, as far as possible, the necessary evils of prison-life.

Vascular Pain.—At a recent meeting of the Association of Physicians, of Vienna, NOTHNAGEL (*Wiener medicin. Presse*, 1893, No. 46, p. 1819) made the novel suggestion that many of the vague pains so commonly complained of, and which in the absence of demonstrable lesion are ordinarily designated neuralgic, rheumatic, or myalgic, may be dependent upon a disordered state of the walls of the bloodvessels. Thus, in cases in which the symptoms of aneurism later appear, it has been observed that pain was present before compression or involvement of adjacent structures has taken place or distinctive physical signs are recognizable. It is believed that when headache precedes an apoplectic seizure it is indicative of the occurrence of thrombosis, rather than hemorrhage. It is not established, on the one hand, that cerebral ischemia will give rise to pain, or, on the other hand, that cerebral tissue is sensitive, so that the abnormal sensations are to be attributed to changes in the vascular wall. It has been shown that there is a form of migraine dependent upon vascular spasm, and it may be that many of the peripheral pains, sometimes associated also with formication and impaired sensibility, are dependent upon corresponding local spasm. Demonstration is yet wanting that the bloodvessels have a sensory nervous supply, although Pacinian corpuscles have been found in the adventitia of the larger vessels.

The Four-years' Course of Medical Study.—The Trustees and Faculty of Rush Medical College have given notice to the Secretary of the American Medical College Association that at the next meeting they will introduce a resolution requiring all students who begin their studies in the fall of 1895 to attend four full courses of lectures in the Medical College of not less than six months each, providing that graduates of all literary and scientific colleges of good standing shall be allowed to graduate in three years, and providing that graduates of dental colleges requiring three full years of study may be allowed to graduate in two years; and that graduates of dental and pharmaceutical colleges requiring only two years of study may be allowed to graduate in three years in the medical college.

Good! But the semester should be, "not less than eight or nine months" instead of "not less than six months." It is no kindness to the lobster to put him in cold water and bring the temperature slowly up to the boiling-point. The more speedily and frankly we accept the inevitable, the better.

Blindness in England and Wales.—The agitation directed toward the prevention of ophthalmia neonatorum, in conjunction with the natural advances in medical art, is already bearing good fruit in the reduction in the number of cases of blindness, as indicated by certain statistics quoted in a recent number of the *Lancet*. From these figures it would appear that whilst in 1871 there was in England and Wales one blind person to every 1051, the proportion had in 1891 fallen to one in every 1235. The chief cause of blindness is undoubtedly to be found in ophthalmia neonatorum, and it is probably as a result of the better and earlier treatment of this condition that much of the improvement has taken place. A corresponding improvement is likewise to be observed at other periods of life, and this is to be ascribed to the general advances made in ophthalmic diagnosis and treatment.

Increase of Suicide in France.—A study of the number of suicides in France reveals a most deplorable state of affairs. According to the *Journal Officiel*, during the year 1890 this number reached the formidable figure of 8410 (6576 males and 1834 females). These figures indicate a progressive increase in the number of suicides. In the quinquennial period from 1861 to 1865 the average annual number of suicides was 4661 (12 per 100,000 of the population); while during the period from 1886 to 1890 the average annual number was 8226 (or 21 per 100,000). The proportion of suicides among children under the age of sixteen years has also increased. While in the period from 1871 to 1875 the number was 31, it was in 1886, 62; in 1887, 68; in 1888, 65; in 1889, 77; and in 1890, 80.

SELECTIONS.

SUPERFICIALITY AND SELFISHNESS IN THERAPEUTICS.

"IN the work of the younger members of our profession I see, or at least I think that I see, greater care, patience, and accuracy in observation, a more rigorous fidelity in the record of therapeutical experiments, wiser caution in speculation, graver deliberation in judgment, a growing frankness in the confession of oversights and errors, increasing severity in the siftings and testings of their own conclusions, a readier effacement of the personality in the work, less unseemly eagerness for mere priority of publication, a deepened sense of the responsibilities of premature speech and writing, a rapidly abating bitterness in the conflicts of opposing views, a more robust and manlier spirit of scientific life, and less reluctance in making admission that there is no unconditional truth in the results of our inquiries—no finality in our finished work, no creed in medicine. But the Society has done more than train good workers: it has repressed bad workers. For one competent and conscientious worker there are ten who are incompetent and unconscientious, and who in divers ways hinder our progress and spoil our present possessions. Intolerant of the patient and painful toil of the true worker, acute in power of superficial observation, gifted with a certain showy versatility, quick at catching hold of new ideas, ingenious in guessing, crude in experiment, loose in therapeutic trials, hasty in speculation, strong in dogmatic assertions, accomplished in the transfiguration and use of other men's work, finding what they want wherever they seek it, unhindered by difficulties, facile in speech, ready in writing, thirsty for notice—such men, now, alas! not uncommon in medicine, beget papers so quickly that they can have no necessary relation to time, observation, or thought, and flood our literature with their unworthy if not unveracious lucubrations. The favorite hunting-ground for such men is therapeutics, and their favorite sport is the catching of remedies, the putting of them to new uses, and the setting forth of their successful results. These men discern no difficulties and have no failures; they can illustrate their successes by scores of cases, and explain them by the

most ingenious theories. There is scarcely any limit to the extent and variety of their achievements, and as they flaunt along in the fulness of self-satisfaction they look down with pitying condescension upon those in the straight and narrow way who conscientiously toil with small success in seeking after truth, but who, nevertheless, missing the praise of men, find strength and solace in their favored search."—SIR ANDREW CLARK, in the *Boston Medical and Surgical Journal*, November 16, 1893.

THE DUTY OF THE PUBLIC TO MEDICINE.

IT is interesting to compare the aid extended by the public to theologic and technical education with that granted, for the same purpose, to medicine. According to Dr. Gould, the editor of the Philadelphia MEDICAL NEWS, there is, in the United States, a sum of between seventeen and eighteen millions of dollars invested in theologic education, while there is less than half a million invested in medical education. In Ontario, according to the estimates I have in hand, the figures are, respectively, $2,100,000 and $85,000. The amount invested in technical education in the United States it is difficult to estimate, but it is undoubtedly a vast sum. In this province the amount given to aid agricultural and mechanical instruction and civil engineering reaches the neighborhood of $300,000, and this from the State. It may be urged that whatever is given to hospitals should be considered under the head of medical education; but if it could be shown that they always serve that purpose, the contention would be, in some respects, a valid one. But who will contend that this very indirect aid, if it is that, is the equivalent of that granted to instruction in mining, mechanical and civil engineering, and to agricultural education? When millions are given voluntarily by the people to the support of instruction in the various denominational theologies, the State ought surely to presume to give a fraction of such a sum to aid that which is, in the language of the Marquis of Salisbury, "the most sober, the most absolute, the most positive of all the sciences."—PROFESSOR A. B. MACALLUM, Inaugural Lecture, University Medical Faculty, Toronto, October 3, 1893.

SOCIETY PROCEEDINGS.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, held at the New York Academy of Medicine, Tuesday evening, December 5, 1893.

DR. M. ALLEN STARR, PRESIDENT, IN THE CHAIR.

DR. L. STIEGLITZ presented a young man, twenty-four years old, who three years ago developed a swelling in the right sub-maxillary region. This disappeared in about three weeks, and was replaced by atrophic tissue, a scleroderma. About six months ago the patient began to suffer from spasmodic contractions of the right masseter and platysma muscles, which still continue. It was not believed that the scleroderma and the spasmodic muscular contractions were due to a common cause, although it was conceded that such an association was possible. Dr. Stieglitz was rather inclined to think that the contractions were due to reflex irritation.

DR. FREDERICK PETERSON presented a specimen of "Glio-sarcoma of the Basal Ganglia." The case was that of a man, fifty years old, who had been in excellent health, with the exception of occasional attacks of vertigo and slight headache, until June 8, 1893, when he fell to the floor in his office. He had a general convulsion, and was unconscious for ten hours. In two weeks he was well enough to return to his office from his home in New Jersey, and to continue at work for five days, when headache and malaise kept him at home. Four weeks after his first convulsion he had five or six more of short duration, and rather left-sided in character. At this time he presented the following symptoms: Left hemiparesis and hemianesthesia; left hemianopsia; a tendency to somnolence; pupils equal and small; occasional delirium; great frontal headache; pulse from 52 to 60 per minute; respirations slow; slight optic neuritis. The diagnosis of sarcoma or glioma situated deep in the brain, so as to affect the posterior limb of the right internal capsule, was made. An operation was out of the question. The man was unconscious during the last three days of life. At the autopsy, made just five months after the first apparent onset of symptoms, a glio-sarcoma was found, about two inches in diameter, occupying the region of the basal ganglia, especially posteriorly, and projecting upward into the right lateral ventricle, and downward somewhat into the right crus. It was not strictly circumscribed, and there was some infiltration into the adjacent white matter of the brain, with here and there some areas of softened brain-tissue. A secondary tumor, the size of an almond, was found attached to the dura mater on the right side, compressing the cortex in the region of the angular gyrus.

DR. PETERSON also presented the fresh brain from "A Case of Infantile Cerebral Spastic Diplegia." The patient was a female infant, twenty months old, with congenital diplegia; that is, spastic paralysis of all four extremities. The child was subject to convulsions, and had enormously exaggerated knee-jerks and ankle-clonus. Its head was exceedingly small. At the autopsy the skull bones were found to be considerably thickened, and all the sutures and fontanels were closed and united. The dura was very thick. There was no increased amount of sub-dural fluid. Over each hemisphere a large group of convolutions, including especially the motor area, were found wanting. The vacuum caused by this atrophy was filled partly by sub-dural fluid and partly by the bulging of each ventricle; there was no internal hydrocephalus. There was no communication between the ventricles and the exterior of the hemispheres. A microscopic examination of the spinal cord showed degeneration and atrophy in the lateral columns.

DR. PETERSON also presented a specimen of "Chronic Hydrocephalus without a Cerebrum." The case was one of a female infant, eighteen months old. Little could be learned of its early history. It had a large head, with widely-gaping fontanels. The child was blind, and had nystagmus. There was rigidity of all four extremities, occasional convulsions and, toward the last, opisthotonus. The child often cried out at night. Speaking to or moving it caused it to cry out. The pulse was rapid and feeble. The urine contained a trace of albumin. There was no trouble with the bladder or rectal sphinc-

ters. The child could not nurse, and was fed with a dropper. It died suddenly in a convulsion. The temperature never rose above 98° F. while it was under observation. Toward the last the infant vomited occasionally after feeding. At the autopsy, sixty-four ounces of reddish serum were first removed by tapping at the anterior fontanel. The skull was very thin, as was also the dura. The falx cerebri had disappeared. At the base of the brain the basal ganglia stood out prominently, the floor of the lateral ventricles being exposed. The cerebellum appeared to be of normal size. There was a mere vestige of each hemisphere. There was degeneration and atrophy of the lateral columns of the cord.

DR. ALFRED WIENER reported "A Case of Subacute Unilateral Bulbar Palsy, with Autopsy." The patient was a young man, seventeen years old. The family history was negative with respect to any hereditary nervous trouble. The patient had always been in good health up to two years ago, when he was seized with an attack of perityphlitis, from which he recovered after five weeks of illness. More than two years ago the glands on both sides of the neck in the region of the sterno-cleido-mastoid muscles began to enlarge. In the summer of the following year, 1892, an abscess formed in one of these glands and had to be evacuated. In August, 1892, the glands on the right side, together with a large portion of the sterno-cleido-mastoid muscle, were excised. Those on the left side were removed in the following month, and were found to be tuberculous. The patient rapidly recovered, and nothing unusual was noticed until November, 1892, when it was discovered that his tongue deviated to the right side, and shortly after this he experienced some difficulty in swallowing. He soon became hoarse and coughed with difficulty, and within a space of ten days complete unilateral palsy of the right side of the tongue, soft palate, pharynx, and right recurrent laryngeal nerve developed. There was no disturbance of the respiratory or cardiac organs, or other condition present that should have called attention to an affection of any other cranial or spinal nerves than the ninth, tenth, eleventh, and twelfth. The symptoms remained stationary for a time; then the patient began to grow much weaker, and suddenly, on March 26, 1893, he had an attack of respiratory failure. From this he partially recovered, and then continued in a condition of slight respiratory difficulty. He could hardly speak above a whisper. He had excessive salivation. On April 11th he could barely protrude his tongue beyond the edge of his teeth. His lips remained normal, and could be brought into perfect apposition. The palate and pharynx on the left side remained normal. On April 20th the man had another attack of respiratory failure, which proved fatal.

At the autopsy, made six hours after death, the motor cortex, internal capsule, crura cerebri, and pons were found normal. The nucleus of the twelfth nerve on the right side was much diseased, while that on the left side was diseased to but a slight degree. The nuclei of the ninth, tenth, and eleventh nerves were slightly affected, those on the right side a little more so than those on the left. The respiratory bundle of the right side appeared to be completely degenerated, while on the left, in the region of the hypoglossal nucleus, the lower and anterior portions were diseased. In the region of the ninth nerve a few fibers were affected. The intra-medullary portions of the ninth, tenth, eleventh, and twelfth nerves were less prominent on the right side than on the left. Otherwise everything appeared to be perfectly normal up to the exit of the first cervical nerve from the spinal cord. As regards the nature of the lesion, no tubercle was found, as had been expected, nor were tubercle-bacilli detected on microscopic examination. There was simply an atrophy of the ganglion-cells and fibers which were motor in function.

From a careful consideration of the clinical and pathologic aspects of the case the following conclusions were reached: 1. That the region of the hypoglossal nucleus gives origin to nerve-fibers that supply the tongue, palate, pharynx, and larynx on one side of the body. 2. That the column of nerve-fibers known as the respiratory bundle, consists of fibers from the glosso-pharyngeal, vagus, and vago-accessorium nerves, and that the lower and anterior portion of this column, probably serves as the locality for the vagus and vago-accessorium fibers. 3. That the glosso-pharyngeal nerve seems to control the reflexes of nausea and gagging in the soft palate and pharynx, and also to send some motor filaments to the pharyngeal muscles. These latter filaments take their origin in the hypoglossal nucleus, and ascend in the respiratory column to the nucleus proper, and then make their exit with the glosso-pharyngeal nerve. 4. That the muscles of the soft palate are not innervated by fibers from the seventh nerve.

DR. ROBERT SAFFORD NEWTON read a paper entitled "The Pons-Medulla Flocculus Triangle as a Tumor Site, with Pathologic Findings." He reported the case of a woman, twenty-eight years old, who entered St. Mary's Hospital, July 10, 1893, complaining of constant headache for a fortnight, with morning vomiting and sickness for seven days. There was no history of trauma, and no specific history; the family history was negative. Two days after admission the woman was examined, and apart from a silly manner and a slight drawling in her speech she presented no symptoms. On July 20th the patient became weak and fell to the floor. She muttered to herself during the night and moaned about her head. The pain appeared to be diffuse. She was dull and stupid. Her speech was prolonged and tedious. At this time there was no observable defect of the cranial nerves. The pulse was 45 per minute. The woman had a shuffling walk, with some tendency to go to the right. The superficial reflexes were present, the knee jerk was exaggerated on the right side. On July 22d the patient became quite deaf. The headache was very violent, keeping her awake. On July 24th the patient was very feeble. Deafness was marked, especially in the left ear; there was, however, no tenderness or discharge. The patient stated that she could not see well, but the opthalmoscope showed no marked lesion. Upon standing up, the patient was projected to the right very forcibly. The movement at each trial was accompanied by a look of fear, pallor of the face, dilatation of the pupils and bathing of the surface in cold perspiration.

From this time on the patient failed rapidly; she grew petulant and childish; her appetite remained fairly good; vision became worse; nystagmus was present for one day only; the external rectus was also temporarily

affected. For a short time there was a transient facial tic. The sense of smell was present to the last. Optic neuritis first appeared in the right eye, then in the left, and rapidly progressed to total blindness. The patient also became totally deaf. Her sense of taste was not appreciably affected, although she occasionally complained of a hot, scalding feeling at the back of the tongue and palate. Her pulse was slow from the beginning; toward the last it dropped to as low as ten, twelve, and fourteen beats per minute, and three days before her death it dropped to six beats per minute. There was no anesthesia or implication of the pain-sense, temperature-sense, tactile sense, or muscular sense. She never had any convulsive seizures or paralytic attacks. The weakness steadily progressed; there was loss of control of the sphincters; the respirations became slow and gradually ceased. Just before death the woman was still able to distinguish between whiskey and milk.

The autopsy was made ten hours after death. Upon removing the brain an enormous tumor, with a central projection, was found on the left side. The swelling was somewhat triangular; its apex was under the thalamus and geniculate body, its base crowding the cerebellum off from the medulla, and its side line not quite reaching the middle of the pons. In the central pons-region was a projecting mass, shaped like a thumb. The bulk of the growth was a cyst. The left half of the pons was much softened and the medulla and cerebellum were flattened. The olfactory nerve was intact. The optic nerve was swollen on the left side. The third and fourth nerves were intact. The fifth and sixth also seemed to have remained unchanged. The seventh nerve was on one side of the growth, the eighth on the other. The nuclei of the ninth, tenth, and eleventh nerves were pushed aside by the change in position of the floor of the medulla. The nucleus of the twelfth nerve was involved in the growth. The cyst began at the margin of the fourth ventricle, by a blocking of the channel of communication between the lateral cisternæ of the ventricle and the cavity of the arachnoid.

Dr. Newton referred to the natural spaces or reservoirs of the sub-arachnoid fluid that exist in this portion of the brain, and how easily a cystic growth may be developed there; and also to what an enormous size it may attain and what numerous tissues and parts may be invaded, without necessarily giving rise to any localizing symptoms.

DR. CHARLES L. DANA read a paper entitled "Syringomyelia; Central Glioma of the Spinal Cord, with Spontaneous Central Hemorrhage." He narrated the history of a man who had a central gliomatous tumor in the lower part of the dorsal region of the spinal cord. This tumor progressed slowly for two or three years, causing during that time the symptoms of a transverse myelitis chiefly, although the presence of a spinal tumor was suspected. Among other symptoms there was anesthesia of the right leg, extending up to the twelfth dorsal spine, and involving tactile, thermic, and painful sensations. The left leg was also anesthetic, but to a slighter degree. Just before the man's death a large hemorrhage occurred, which was confined to the center of the spinal cord and which caused exquisite pain, the man, in fact, dying from exhaustion. Upon post-mortem examination a large central hemorrhage, destroying nearly every particle of the spinal cord at the level of the seventh dorsal segment, was found. This hemorrhage extended upward and downward for a distance of about three inches. Around the hemorrhage and above it were evidences of a gliomatous infiltration involving nearly the whole of the transverse area of the cord at that level. Very striking secondary degenerations, ascending and descending, were found. The case was one of glioma of the spinal cord, without the formation of a cavity. Although clinically, and in one sense pathologically, it would be a case of syringomyelia, yet that name cannot strictly be applied to it.

In commenting on this case, Dr. Dana referred to the question of the existence or the non-existence of a pain-tract, and the advisability of searching for it. The psychologists seem to have come to the conclusion that pain is not a sensation, but a form of feeling; that it is not to be classed with the sensations of touch or temperature or heat; that it does not have peripheral end-organs; and that there are no nerves in existence irritation of which alone gives rise to pain; that there is no such thing as a pain-tract; that the attempt to locate such a tract is like the pursuit of a will-o'-wisp. Dr. Dana said that after a very careful study of this question he has been converted to the psychologists' view. If it is claimed that there is a special tract for pain, it can just as well be claimed that there is one for hunger and various other sensations. If there is a special tract for any of the common subjective sensations, there must be special tracts for all.

DR. B. SACHS said that formerly he had held to the view that pain was nothing more than an intensification of the ordinary tactile sense, and in the majority of cases encountered such an explanation would hold good, and under such conditions special pain-tracts should not be looked for. The clinical facts that have been brought out with regard to syringomyelia, however, do not support such a view. Tactile and thermic sense may remain normal, when the pain-sense is entirely lost. The psychologists' view of this question is one that is rather difficult to reconcile with the clinical facts observed in syringomyelia. On the other hand, this disease is very destructive and irregular in course, and for this reason it is rather an unsafe guide in the determination of physiologic functions.

DR. C. A. HERTER said that several years ago he hemisected the spinal cord of a monkey in the mid-dorsal region, and was unable to find in that case any evidence of a loss of sensibility to pain, either on the same side as the lesion, or on the opposite side. He also performed this experiment on an opossum, with a like result. Mott, in his experiments, cut the antero-lateral ascending tract and was unable to find any evidence of loss of sensibility to pain. The results of experiments on animals, of course, cannot be applied directly to man.

DR. LANDON CARTER GRAY said that in the present state of knowledge as regards the exact functions of the various columns of the cord—the columns of Burdach and of Goll, and the so-called column of Gowers and the uncertainty that exists as to the exact demarcation of the latter—no definite conclusions can be arrived at as to the location of the pain-tracts. So far as clinical evidence

goes, there certainly is such a thing as a pain-sense. In hysteria the tactile sense may be preserved, while the pain-sense is entirely lost.

DR. STARR said that the existence of pain-sensations and of a centripetal pain-tract must be admitted. That tract must necessarily pass through the posterior nerve-roots, because painful sensations of a hallucinatory character occur in locomotor ataxia. It must extend for a distance in the central gray matter of the cord. There are now on record over seventy cases of syringomyelia with autopsies. In these cases there has been a decided loss of pain in a certain limb. When the affected limb has been an arm, then the cavity in the cord was in the cervical region, and the pain-sense was preserved on the trunk and in the legs. Therefore these sensations, though they pass for a short distance in the central gray matter of the cord, subsequently pass into the white columns. The central gray matter contains numerous cells, each of which sends its fibers into the antero-lateral columns, and these pass upward. While it is by no means positive that the antero-lateral columns transmit sensations of pain, all of the facts seem to point to the correctness of this view. The column of Lissauer can have nothing to do with the transmission of pain-sensations. It consists only of short fibers, does not increase in size from below upward, and cannot transmit impulses upward for any great distance. The sense of hunger is by no means analogous to the sense of pain. A distinction must be made between a common sensation and a special sensation. In conclusion, Dr. Starr referred to a case reported by Edinger, with autopsy, in which the lesion was found in the parietal region on one side, and in which the symptoms were chiefly those of intense radiating pain on the opposite side of the body.

DR. DANA added that his views regarding the non-existence of a pain-tract were arrived at only after a long and thorough study of the subject. The pain-sense and the touch-sense and the heat-sense, and other forms of sensibility must not be confounded. Pain and touch are entirely different. Pain is a subjective or common sensation. Touch is objective. Pain is much more closely allied to hunger than it is to touch. Pain is not a special sensation, but a modification of it.

CORRESPONDENCE.

EFFECT OF METHOD OF CASTRATION ON ANIMALS.

To the Editor of THE MEDICAL NEWS,

SIR: Dr. Goodell's interesting article on "The Effect of Castration on Woman" (MEDICAL NEWS, December 9, 1893) recalls a theory familiar to some horsemen, who claim that in castrating a horse, a short "cord" destroys the life and spirit of the animal. A long one—*i. e.*, one cut as close as possible to the testicle—is more apt to retain these desirable attributes. In view of Dr. Goodell's experience, it is possible that the idea may have some foundation in fact; the retention of the epididymis or perhaps a small portion of the testicle, may be responsible for the great difference in the bearing and action of some of our roadsters.

Respectfully yours,

GEO. H. RHOADS.

TOBYHANNA, MONROE CO., PA.

NEWS ITEMS.

The Late Dr. William F. Hutchinson.—At a meeting of the Executive Council of the American Electro-Therapeutic Association the following resolutions on the death of Dr. William F. Hutchinson, of Providence, R. I., were unanimously adopted:

WHEREAS, It becomes our painful duty to announce the death of Dr. William F. Hutchinson, one of the Foundation Fellows of the American Electro-Therapeutic Association as well as the First-Vice President of the same; and,

Whereas, In his death we lose a warm and faithful friend, a valued associate, and an accomplished member of the profession; therefore be it

Resolved, That this Association desires to place on record its appreciation of his genial spirit, his active co-operation in the work of the Association and of his deep interest in the scientific questions relative to his chosen profession.

Resolved, That we express our sincere regret and heartfelt sorrow at his death.

Resolved, That we tender to his sorrowing family an expression of our profound sympathy in their great loss.

Resolved, That a copy of these resolutions be sent to the bereaved family, to the medical journals, and that they be spread upon the minutes of the Association.

Correction.—By an inadvertence the word "no" appeared instead of "as" in the fourteenth line from the bottom of the second column of page 662 of THE NEWS of December 9th. The entire sentence should have read: "I subjected the blood to a careful microscopic examination, as malaria had been suggested as the cause of the anemia."

To Succeed LeFort.—Duplay has been given charge of the surgical clinic at the Hôtel-Dieu in succession to the late Prof. Le Fort; and Tillaux has succeeded to the surgical clinic at the Charité.

Professor Rudolf Kaltenbach, director of the Gynecologic Clinic at Halle, died recently.

BOOKS AND PAMPHLETS RECEIVED.

The Occurrence of Myopia among School-children. Translated from the German of Dr. Hermann Cohn's work on "Hygiene of the Eyes." By Dr. S. C. Ayres and Prof. J. Remsen Bishop. Reprinted from the American Journal of Ophthalmology, 1893.

A Case of Panophthalmitis, Caused by the Bacillus Coli Communis. By Robert L. Randolph, M.D. Ext. from the American Journal of the Medical Sciences, 1893.

A System of Genito-urinary Diseases, Syphilology, and Dermatology. By Various Authors. Edited by Prince A. Morrow, A.M., M.D. With Illustrations. In three volumes. Vol. II. Syphilology. New York: D. Appleton & Co., 1893.

A Text-book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S. With Illustrations. Sixth edition. Part I, comprising Book I: Blood. The Tissues of Movement. The Vascular Mechanism. New York and London: MacMillan & Co., 1893.

One Hundred Operations for Severe Structural Disease of the Abdominal and Pelvic Organs of Women. By I. S. Stone, M.D. Reprinted from the New York Medical Journal, 1893.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

THE AIMS AND METHODS OF MEDICAL EDUCATION.[1]

BY WILLIAM C. DABNEY, M.D.,
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THE ultimate aim of medical education is to fit those who enter upon the study of medicine to prevent and cure disease and to relieve suffering. For the proper accomplishment of this work, several things are necessary:

1. A sufficient development of the faculty of observation and of the reasoning faculty to enable the person to judge of cause and effect, and to draw proper conclusions from ascertained facts.

2. An ability and a willingness to work.

3. A knowledge of the work done by others directly or indirectly connected with medical matters.

4. A just appreciation of the extent and character of the work that they undertake and of the responsibility that they assume.

I propose to consider in this paper the importance of these different subjects, and shall endeavor to show by what methods the mental training and discipline of a medical student may be best accomplished.

Let me say in the beginning, however, that, in considering the requirements of those entering upon the study of medicine, I have in view the great numbers who yearly enter our lecture-rooms with very moderate intellectual capacity, scant literary training, and often the most deplorable ignorance of the gravity of the task and the responsibility on which they are entering. These are the men and women who treat the great masses of our people, and who need, therefore, the best medical education and training which can be given them.

I recognize the fact—so encouraging to all who are interested in higher medical education—that among those entering upon the study of medicine, there is from year to year a larger and larger number whose minds have been broadened and enlightened by preliminary training and who are thoroughly alive to their own responsibility and the needs of humanity; but the medical teacher should always keep in mind the needs and requirements of the *average* medical student, and not of the favored few who by reason of natural ability or superior preliminary training will overcome all obstacles and far outstrip their less favored associates.

I have stated briefly the chief requisites of those entering upon the study and practice of medicine. The next question that presents itself is: What are the best means of attaining these requisites? I shall consider this question under the following headings:

1. The studies calculated to develop the faculty of *observation*.

2. The studies calculated to develop the *reasoning faculties*.

3. The order in which the various branches of medicine should be studied.

4. The time that should be given to laboratory work and lectures each day.

5. The value and importance of didactic lectures and of daily recitations.

6. The objects and methods of clinical instruction.

7. The importance of a high standard of graduation in medical colleges, with especial reference to the character of the work to be done by the graduate in after-life.

1. *The studies calculated to develop the faculty of observation.* No argument would seem to be necessary to show the importance of a habit of careful observation of details in the study and practice of medicine; yet it is surprising to see how many persons, well educated in other respects, are wofully deficient in this. It would take me beyond the scope of this paper to consider, except in the most cursory manner, the means by which the faculty of observation is to be developed before the study of medicine is entered upon. Yet it is a matter of the utmost importance, especially at the present time when so many institutions of learning are arranging the studies in their academic courses, with reference to the subsequent professional studies of the student.

The *academic* studies that seem to me of most importance for this purpose are geology, zoölogy, and botany, especially the last. All of these branches of study necessitate the most careful observation of details, but botany is of especial value because of its intimate connection with bacteriology.

When the study of medicine itself is entered upon, chemistry, anatomy, histology, bacteriology are the studies that necessitate careful observation, and are therefore of the utmost importance, not only on

[1] Read before the Section on Medical Pedagogics of the Pan-American Medical Congress, September 7, 1893.

account of their intrinsic value, but as a means of mental training and discipline as well. There are of course other subjects that necessitate careful observation—indeed, all branches of knowledge do—but those named seem to me the most useful for developing this faculty in the medical student.

2. *The studies calculated to develop the reasoning faculties.* The *academic* studies that are valuable for developing the reasoning faculties and that are of especial value to those who propose to enter upon the study of medicine are physics and logic. I do not mean to exclude mathematics from this list, but I have not named it specifically because, to some extent at least, it is a subject studied by all, and its value for purposes of mental discipline is universally recognized. Nor would I underrate the value of the languages—ancient and modern—not only on account of the wide field that they open up for instruction and entertainment, but because of the broadening influence that they exert upon the mental faculties. I am old-fashioned enough to believe even in the study of Greek, not only for its own sake but for its influence upon the intellectual faculties as well. Still it seems to me that no other academic studies are as useful to develop the reasoning faculties of the student who proposes to enter upon the study of medicine, as those first named—physics and logic.

The medical studies proper that are most useful for this purpose are physiology and pathology viewed in its broader aspect. I shall speak of this more in detail when I come to consider the value of didactic lectures.

3. *The order in which the various branches of medicine should be studied.* There is but little difference of opinion at the present day on this point, and it is almost universally conceded that *some* knowledge at least of chemistry, anatomy, normal histology and phyisology is absolutely necessary before the student can profitably engage in the study of the so-called *practical* branches.

A few colleges, I believe, still expect the student to begin his medical studies with the daily attendance upon lectures on anatomy, chemistry, physiology, materia medica, obstetrics, practice, surgery, and perhaps a number of special subjects, but the number of these schools is growing rapidly less, and it is almost certain that in a short time all medical schools that are worthy of the name will adopt a graded course and give the student some time for study outside of the lecture-room.

4. *The time that should be given to lectures and laboratory work each day.* Not many years ago the students in many, if not most, medical schools were expected to attend lectures from 8 or 9 A.M. till 5 or 6 P.M., with an intermission for dinner of one hour. The dissections were to be made at night. It is hard to conceive how the intellectual faculties of a student could be developed by this process. Mental confusion and physical fatigue would combine to retard rather than aid the development of these faculties. Three hours a day, at most, is all the time, it seems to me, that should be required of the student so far as listening to didactic lectures is concerned; and scarcely any more time should be given to laboratory instruction, if both didactic lectures and laboratory instruction are given on the same day.

From four to six hours more, the time depending on the physical health and mental training of the student, might be profitably spent in carefully reading in some good text-books the subjects of the lectures of the day and comparing what has been seen in the laboratory with the teachings of those who are specially skilled in laboratory work.

I do not speak here of clinical instruction; I shall allude to that briefly a little later on. I need only say just now that it seems to me far better that the undergraduate should see a *few* cases daily and study them *thoroughly*, than that he should have his mind crowded with different subjects, none of which can be properly digested.

5. *The value and importance of didactic lectures and of daily recitations.* There is at present a manifest tendency to do away in great part with the old-fashioned didactic lectures, and to substitute for them laboratory and clinical work on the one hand and the reading of judicious text-books on the other. Nor can it be denied that the change has been of immense value to medical education; but I am firmly convinced that on many branches of medicine didactic lectures, if properly given, are of great value as a means of education—that is, as a means of making men *think* and *reason* for themselves. For example, in the study of the practice of medicine, with all the excellent books on the subject, none can or does explain the connection between morbid anatomy, causes, symptoms, etc., as is done in the didactic lecture, nor can an author emphasize in a text-book the points that may be of especial moment without making the book of inordinate length. I would offer an earnest plea, then, for the retention of didactic lectures as a means of *education*—of teaching men to think—not to the exclusion of other methods, but as a valuable adjuvant thereto.

Then there is another means of instruction which I believe to be of inestimable value, but that unfortunately cannot be thoroughly applied in large medical schools—I mean daily recitations on the subject of the previous lecture. These recitations are a means of instruction to both teacher and pupil; the teacher learns from them what points he has failed to make clear, and the student is taught not only what he had failed to catch before, but

something far more important than that—the necessity for careful and thorough study and preparation. Much as I value the didactic lecture as a means of instruction, or rather of *education*, if I were compelled in my own teaching to abandon it or the daily recitations, I would unhesitatingly discard the didactic lecture, for in the course of the recitations nearly all the explanations needed could be given.

6. *The objects and methods of clinical instruction.* There are two objects to be attained by clinical instruction: the first, which is of great importance to the student, is the *method of conducting the examination* of a patient; and the second is to teach the symptoms and signs of diseased conditions.

For the attainment of these objects it is essential that the student should not only see examinations made by others, but that he should see and hear and feel for himself. It is equally important, too, that the student should understand the significance of what he does see and hear, and for this reason it seems to me far better that the undergraduate at least should see but a few cases a day, and should be required to study them *thoroughly*, both at the bedside and in the text-books.

Another point seems to me of the greatest importance in connection with clinical instruction, namely, that the student should have been thoroughly drilled in the *principles* of medicine before he begins to study cases, so that he can understand the significance of the various symptoms and signs, and their connection with the morbid changes in the body.

For example, how can a student *understand* the passive hyperemia and dropsy of advanced cardiac disease, who knows nothing of the anatomy and physiology of the heart and vessels, and how can he apply the proper treatment unless he has studied the pathology of the process and the action of drugs?

7. *The importance of a high standard of graduation in medical schools, with especial reference to the character of the work to be done by the graduate in after-life.* If I may judge from my own observations and conversations I have had with a number of physicians who are interested in medical education, the importance of a high standard of graduation on the subsequent work of the student is not appreciated as it should be. It goes without saying that a man with very scant knowledge of medicine is not a suitable person to intrust with the health and lives of his fellow-creatures, but it seems to be a common impression that the defects and deficiencies of early training will be corrected by the experience of subsequent practice. Doubtless this in a measure is true; but there is another side to the subject which I believe to be equally true and of vast importance in medical education, namely, that the graduates of a school having a high standard of graduation will have a higher aim and do better work all through life than the graduates of a school having as good or better facilities for instruction, but whose requirements for graduation are relatively low. My attention was first called to this matter in 1885, when the graduates of a number of different schools appeared before me, as a member of the Board of Medical Examiners of Virginia, to undergo their "State examination." It was a matter of profound astonishment to me and to my colleagues on the Board to see the *superficial* character of the answers given to many of the questions by men of good sense, fair general education, and graduates of schools having admirable facilities for instruction, and whose faculties would compare favorably with any in the world.

I well remember the surprise depicted on the faces of some of these young men who were rejected, and the statement made by some of them that they had "never been taught that all these details were necessary in medicine"! The superficial character of the answers sometimes received and accepted may be judged also by the questions asked. I know of an instance, for example, in which in a written examination on anatomy, lasting two or three hours, one of the six questions was, "Describe the alimentary canal and its appendages." Now, how can a young man of average capacity be expected to learn *thoroughness* when the questions given him on examination are of such a character that only the most superficial answers can be given? How can earnest, painstaking, careful, and thorough work be expected of him in after-life when his training has been such as to encourage the reverse, and that training has been received from men of acknowledged ability and experience?

In conclusion, then, I would plead most earnestly for a higher standard of graduation, not only because it necessitates more knowledge of medical matters when the student graduates, but because it gives him a keener sense of the gravity of the duties that he has assumed and of the responsibilities that rest upon him.

A PETRIFIED EYE.[1]

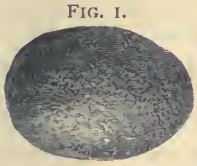
BY JAMES A. LYDSTON, M.D., PH.G.,
FORMERLY PROFESSOR OF INORGANIC AND MEDICAL CHEMISTRY AND LECTURER ON DISEASES OF THE EYE AND EAR, CHICAGO COLLEGE OF PHYSICIANS AND SURGERY; FELLOW OF THE CHICAGO ACADEMY OF MEDICINE.

THROUGH the courtesy of Mr. George B. Davis, of Chicago, I am able to present to the Academy this evening a fossil that I believe presents a typical example of a petrified eye. The fossil was found at the mouth of Knife River, on the north shore of Lake Superior, in 1886, and was first cut by a Chicago lapidary, named Lyman. In order to de-

[1] Read before the Chicago Academy of Medicine, November 10, 1893.

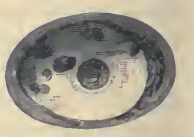
monstrate microscopically the arrangement of its parts, I had a second section made, which shows more clearly the structure of the petrified formation. The eye was first presented to me by Mr. Davis and a reporter for the *Inter-Ocean*, who handed it to me for an opinion. On superficial examination I strongly believed that it was a petrified eye, and so stated at the time, and now, after more exhaustively investigating the subject, I more fully emphasize this opinion. I have submitted it to the critical eyes of some of the most competent and expert lapidaries, and without exception the conclusion of these connoisseurs has been that nothing like it has ever fallen under their observation, and it seems that a single glance will convince even the most skeptical that, aside from the changes consequent upon petrifaction, it most closely approximates the structure of the human eye, and presents many analogous features.

FIG. 1.



Posterior segment of eyeball.

FIG. 2.

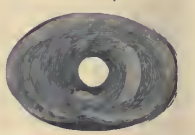


Anterior segment of eyeball.

FIG. 3.

Section showing interior structure.

FIG. 4.



Posterior view of anterior segment, showing lens, etc.

First, we have its outer layer, which conforms to the sclerotic or outer fibrous envelop of the eye, and apparently in keeping therewith we note that it is denser in its vitreous characteristics, and from the fact that its opaqueness renders its illumination impossible, it appears dark under the microscope just as a piece of chalk looks black when held in front of a flame. Lining this we find a somewhat darker pigmented layer composed of circular light and dark striæ, which answers to the choroidal or pigmentary layer of the eye, and we can microscopically outline its several layers, and can even do so macroscopically under intense illumination with reflected light. We cannot define the retina as in its normal state, except its bloodvessels; it is perfectly transparent, and is indistinguishable, and its structure so delicate that it has possibly been obliterated during the petrifactive changes. Furthermore, it is normally so closely approximated to the choroid that fusion would naturally ensue during the process of contraction and shrinkage consequent upon solidification. The vitreous humor or hyaloid body is found in a more or less crystallized form, with here and there darker pigmentary deposits, and prior to the final stages of petrifaction it is probable that the aqueous humor diffused itself throughout the vitreous, thus causing, in combination with the inorganic elements from filtration, a more or less definite crystalloid structure. In regard to the lens, it appears to have been pushed forward into the anterior chamber, and pressed against the iris, and seems to occlude the pupillary opening; in other words, we have here a pretty illustration of occlusio pupillæ. The iris is shown in a somewhat typical manner, and displays itself in a mottled or tesselated form, which is quite noticeable in some irides. Its outlines are distinctly perceptible to the naked eye, and are still more conspicuous when inspected by means of transmitted light and a magnifying lens. We then see at the outer quadrant posteriorly a vacuole or air-chamber, which evidently answers to the junction of the anterior and posterior chambers of the eye, as in cases of displacement of the lens the depth of the anterior chamber is greatly increased. Distinct traces of hematin or oxid of iron are to be seen diffused throughout the anterior portion of the eye, and at the latero-median junction of the iris and sclerotic is found a red discoloration, which, though probably due to a deposition of the oxids of iron and manganese, bears a marked semblance to a hyphemia, or effusion of blood into the anterior chamber.

I have searched the literature in the hope that I might find a similar case recorded, but my efforts have been futile. This, however, does not militate against the soundness of the conclusions reached. It may be argued that such a thing is preposterous in the extreme, but when we recall the fact that in certain pathologic conditions of the human eye we find calcareous deposits, ossification, and other changes, as, for example, in atrophied eyeballs following panophthalmitis, iridocyclitis, and other destructive inflammatory conditions, and we often meet in enucleation with hardened eyeballs closely resembling stone in their general characteristics—so hard, indeed, that it is almost impossible to make sections of them. I would also cite the changes supervening upon amyloid degeneration of the conjunctiva, it being a noteworthy fact that ossification and calcification occur in the later stages of this affection. We also find in cases of cataracta complicata that the lens assumes a calcareous form, and approximates stone in hardness; and still further, in zonular opacity of the cornea we have calcareous depositions.

Now it seems no more difficult that an eye should petrify under the requisite conditions than that other parts of the human body which are just as prone to petrifactive changes should be thus

metamorphosed, and we are aware that in rare instances the flesh, skin, and hair of an animal have been preserved for thousands of years, as in the case of the mammoths entombed within the frozen mud-cliffs of Siberia. In these instances the animal matter has been more or less completely mineralized or petrified.

The first question that naturally presents itself is: How are the remains of animals and plants preserved? The essential conditions are found only in cases in which the organic remains are protected from air and superficial decay—*e. g.*, over the bottom of lake deposits of silt, peat, marl, etc. Stems, branches, and leaves of plants, fruits, or seeds, may be carried into these places, as well as the bodies of land animals, insects, and birds; wild animals venturing on the more treacherous watery parts of a peat-bog are sometimes engulfed. The antiseptic qualities of the peat preserve such remains from decay until the more or less complete metamorphosis characteristic of petrifaction ensues. Hence from European peat-masses many remains of deer and oxen have been exhumed.

The history of the fossil presented to you is of such a nature as to lend all of the requisite conditions for petrifaction, and its characteristics wholly support such an assumption. I regard the fossil as a metamorphosed eye that has suffered a re-arrangement of its constituents, but with sufficient traces remaining to indicate its previous form and structure. The mere presence of water by reason of its universal solvent action necessitates solution of some of the more soluble portions of the eye, and as condensation ensues they may be re-deposited in a new form. This is a possible explanation of the absence of some of the otherwise normal constituents of the eyeball. Most animal formations are derived from the lower grades of the animal kingdom, such as the mollusca, the actinozoa, and the foraminifera; and the explanation of the greater frequency of petrifaction of marine formations lies in the fact of their submarine habitat, their possession of resisting shells; and the mere fact of their food-supply, consisting as it does largely of crustacea and fish, is in itself a factor conducing to a deposition of lime-salts in their several structures, which would favor petrifaction. On the other hand, specimens from the land very seldom find lodgment in subterranean graves, unless they be twigs, leaves, etc., which are doubtless blown or carried by the winds, and, finding a watery grave, that predisposes to petrifactive changes, are accordingly metamorphosed and crystallized. Thus Kirwan says: "North of Quito there is a river that petrifies any kind of wood or leaves. The coral rock, though formed by continuous depositions of polyps, loses by degrees any distinct traces of organic structure, and acquires an internal crystalline structure by water-filtration through its mass, causing a deposition of lime carbonate, etc."

The eye may be that of a predatory animal, whose remains might readily find lodgment in a subterranean cavern, and thence be carried to a watery bed. Thus the British carboniferous rocks have yielded thirteen genera of labyrinthodonts (anthracosaurus, loxomma, ophiderpeton, pholiderpeton, pteroplax, urocordylus, etc.). These were probably fluviatile animals of predaceous habits, subsisting on fish, crustacea, and other organisms of the fresh or salt waters of the coal lagoons, the largest types measuring from seven to eight feet in length.

In conclusion, I will add to the foregoing remarks that the reasons for styling the fossil a petrified eye may be expressed in the following:

1. Its history.
2. Its shape.
3. Its structure (showing as it does such a close analogy to the human eye).
4. Its appearance macroscopically and microscopically.
5. If it is not an eye, what is it?

I submit the question to your scientific minds for consideration.

53 McVICKER'S THEATER BUILDING.

THE RÔLE OF LACTIC ACID IN GASTRIC DIGESTION.[1]

BY ALLEN A. JONES, M.D.,
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LACTIC acid is present in the stomach under normal conditions from thirty to forty minutes after a test-meal composed of a roll and water or of chopped lean beef, dry bread, and water. At the expiration of that time lactic acid should entirely disappear from the stomach-contents and free hydrochloric acid alone should prevail. During the first thirty or forty minutes after meals the digestion of starches and albuminoids progresses quite rapidly, as may be proved by finding the middle-products and end-products of gastric digestion present, so that the presence of free lactic acid does not prohibit digestion.

As soon as food enters the healthy stomach the secretion of hydrochloric acid is excited and it increases in amount until the production of lactic acid is checked. The exact origin of lactic acid in the healthy stomach is still a matter of debate. It may arise wholly from fermentation, or from the combination of some food-product with a secretion from the gastric glandules, or from the gastric

[1] Read before the Buffalo Academy of Medicine, November 14, 1893.

mucosa as a distinct secretion, although electric stimulation of the gastric glandules excites the secretion of hydrochloric acid and not of lactic acid. I think it arises largely from fermentation of the food, as its amount is usually proportionate to the amount of starchy, saccharine, and milk foods taken.

I have, however, many times found lactic acid present in the stomach-contents two, three, or more hours after the ingestion of lean meat alone, in some cases the patient having been on a meat-diet for several days; under such circumstances I have followed the usual custom of calling it sarcolactic acid.

If after a test-meal consisting of albuminoids and starches, lactic acid is found in the stomach-contents at the expiration of one hour or longer, it may be called abnormal. I have found during the past few years that lactic acid very frequently exists in large quantities in the stomach during the late hours of digestion, and that it is persistently present in some cases, without regard to the character of the food or to the period of digestion. Indeed, I have cases on record in which lactic acid was present in excess during the whole period of gastric digestion, and as many of these cases had diminished peristalsis, their stomachs were free from lactic acid only a few hours during the twenty-four.

When hydrochloric acid exists in the stomach in proportions over from 0.2 to 0.4 of 1 per cent., we dignify the defect in gastric chemistry by the name hyperchlorhydria, or an excess of hydrochloric acid. But such a state is not more definite, nor is it more susceptible of detection, study, and treatment, than lactic-acid excess; nor are the etiologic factors more definite in the former than in the latter. I therefore think it reasonable to recognize the condition as an entity, and so consider it.

Lactic acid in abnormal quantity is found in the stomach in many cases having a deficiency of hydrochloric acid. It is difficult to determine in these cases whether the lactic-acid excess is the cause or the consequence of the diminished amount of hydrochloric acid. If, however, upon the withdrawal of all starches and milk-foods from the diet free hydrochloric acid appears in normal amount, it is probable that the excess of lactic acid depends upon improper diet rather than upon primarily diminished secretion of hydrochloric acid. If, on the other hand, free hydrochloric acid does not appear in the gastric contents after stopping starchy and milk foods, it is probable that its secretion is really deficient and therefore lactic-acid fermentation is rendered easy.

A very common cause of lactic-acid excess is found in impaired motility of the stomach, which allows too long retention of its contents, with the over-production of lactic acid by fermentation. With insufficient peristalsis poor absorption often exists, and it is in such conditions that I have frequently been able to demonstrate an excessive total acidity of the gastric contents, owing to the presence of both hydrochloric and lactic acids. Thus in gastrectasia of the Germain-Sée type, the stomach contains not only an excess of hydrochloric acid, but usually also an excess of lactic acid, and the gastric mucous membrane is incessantly subjected to the action of highly irritating contents. When dilatation is associated with stenosis of the pylorus from a malignant growth, hydrochloric acid is present in small amounts only, or is entirely absent. In some of these cases I have found very large quantities of lactic acid, usually with other organic acids, making a total acidity far in excess, while other cases were characterized by a very small amount of lactic acid and a faint total acidity.

Chronic catarrhal gastritis, resulting from whatever cause or causes, renders lactic-acid excess liable. In cases of atrophy of the gastric glandules and a consequent absence of gastric juice we would expect to find lactic-acid fermentation at its height, but such is not the case. In four cases of this nature that I reported[1] the gastric contents were almost invariably neutral in reaction unless acid foods had been taken. In other cases, as yet unreported, lactic acid was found in moderate amounts, and the total acidity was always subnormal.

Of all the factors entering into the production of lactic-acid excess, none is so potent as improper diet. The ingestion of mixed starchy milk puddings at the end of a hearty meal results in the formation of so much lactic acid that its fermentation is perpetuated throughout the entire period of digestion, to the hindrance of proper change of the albuminoids and starches. The common custom of eating pastries, sweetmeats, ice-cream, cakes, and cheese after having eaten thick soups, meats, fish with various sauces, entreés made with cream, salads and salad dressings, is to blame for many digestive disorders.

Drinking milk at meals and between meals, or living on milk alone, not uncommonly lights up the lactic-acid habit in the stomach, and cases of this habit illustrate the baneful effects of persistence in a diet that is not regulated by the condition of the gastric chemistry.

I cannot emphasize sufficiently the importance of lowered general health in the establishment of a gastric state in which the over-production of lactic acid is made easy. When the blood is reduced and the nervous and muscular systems are very much enfeebled, the functions of the stomach are imper-

[1] New York Medical Journal, May 27. 1893.

fectly performed, because the organ is supplied by impoverished blood, its innervation is disturbed, and its musculature is weak. Therefore under the many indiscretions in diet that are inevitable as the average individual lives and as the average cooking prevails, with all its death-dealing virulence, gastric chemistry is necessarily disturbed.

ANTIQUITY OF SYPHILIS AND OF THE USE OF MERCURY IN SYPHILIS IN JAPAN AND CHINA.

BY ALBERT S. ASHMEAD, M.D.,
OF NEW YORK.

THERE is a Japanese book published in Kioto in 1801, by T. Wake, a descendant of the famous Wake Ihinari, who brought the Chinese medicine into Japan. The title—*Bai-so yaku-gen*—signifies brief account of syphilis. Tamba, who wrote its preface, is also a descendant of a very famous Japanese-Chinese physician, Tamba Yorimochi,[1] who introduced the acupuncture treatment into Japan. These two distinguished physicians are often mentioned together—Wake and Tamba—as representing the whole of what Japan owes to China in the way of medicine.

The original Tamba, who lived in the seventh century, wrote the oldest medical book known in Japan, *the Ishinho* or *po*—Japanese encyclopedia of Chinese medicine, in the period 689–807 A.D. It comprised thirty volumes, but is now lost. All that is known of it is taught by word of mouth by the descendants of the author, whose name goes from father to son—that is, to adopted son. One of these Tambas is the author of the preface mentioned. The author (Wake) states that his own work is a copy of the most noted Chinese book on the subject of syphilis—*Bai-so-hiroku*—(secret manuscript on syphilis, written during the Ming dynasty, 1368–1644 A.D.), with his own experiences added to it. In the time of the Chu dynasty—that is, before Confucius—there were, says the writer, two kinds of doctors in China: one to treat skin-diseases (which the author says included syphilis), the other to treat all other diseases. He found that statement in the *Chu-Kwan*, the book of ancient Chinese officers.

The following passage is extracted from the second volume of this very interesting treatise: "Keifun[2] (calomel) is very difficult to handle, and requires in the physician great skill; an imprudence would necessitate a special cure. When this medicine has been unskilfully used a long time its bad effects are difficult to cure at all." The author possesses secret remedies, which he declines to make public, but promises to use them on his own premises. He quotes a certain Jichen, author of an *Encyclopedia of Natural History*, written over a thousand years ago: "Suigin" (literally water-silver—quicksilver), says that ancient writer, "is a negative poisonous matter. It is manufacturned by boiling and burning [some substance, which is probably cinnabar]. When sulfur is added to it, it becomes vermilion. It cures dropsy, mucous-membranous troubles, wet-heat diseases (that is, catarrhs and colds), and especially poisonous syphilis (by which are meant the secondary forms). After its use saliva flows from the gums; in this way the poison is driven out. But if the remedy is used in excessive quantity the poison is driven into muscles, nerves, and bones, which makes it incurable. As an effect of its use, the nourishing power of the blood becomes insufficient; convulsions and pains in the bones may occur; sores and diseases of the penis; also cracks of the feet and hands. Skin-diseases also are a consequence of the abuse of the remedy; these conditions are apt to become incurable."

The author (Wake) says that "in difficult cases the use of keifun is imperative. But if there is a mistake made in the application (probably when the remedy is applied to the wrong stage of the disease) the consequences are fearful. The results cannot be cured." But the use of chicken-diet is recommended, and the remedies are applied as he advises in his cure of tertiary syphilis.

I quote the following passage from the second volume of the *Daido Ruishuho*, a work of eight volumes, composed 806–809 A.D. It is a collection of prescriptions and treatments from all parts of Japan. It is a book in which the authors—a commission appointed by the government—endeavored to antagonize the Chinese methods of Wake and Tamba, and vindicate the independence of Japanese medicine. The principal object of the work was to bring into favor the use of Japanese remedies, as the treatments of Wake and Tamba's school in skin-diseases, and especially syphilis, had proved to be so successful. Of course this shows that mercury was used, otherwise success would have been out of the question.

"*The Wake Medicine or Kasa* (*syphilis*) *Medicine.* The manner of making this is inherited in the house of Wake (that is, the original Wake). As used by Wake, this medicine had been invented and was taught by *Sukunahiko*" (the Æsculapius of Japan), who went about teaching medicine throughout the country in the time before Jinmu Tenno—that is, more than 600 years B.C.

Dr. Hide Miyake, Dean of the Medical College, University of Tokio, in answer to my inquiry as to the use of mercury in the treatment of syphilis in

[1] Said to be descended from a Chinese emperor.

[2] First manufactured in Japan in 714 A.D. (Geert's Minerals and Metallurgy of Japan). Before that time it was imported from China.

Japan, writes me that "the use of this medicine in syphilis was not imported from Europe, but undoubtedly from China."

CHRONIC RETRO-BULBAR NEURITIS.[1]

BY WILLIAM CHEATHAM, A.B., M.D.,
OF LOUISVILLE, KY.

THE true pathology of chronic retro-bulbar neuritis was not well understood until the first demonstration in an autopsy by Samelsohn, in 1882. Leber, Michel, and others had referred to it before, but had never demonstrated the fact by autopsy. It has been demonstrated that "the marginal fibers of the disc end in its immediate vicinity, and in general the central fibers go to the periphery of the retina, while the peripheral fibers of the disc supply the central part of the retina; the papillo-macular fibers entering the eye as a wedge-shaped cluster on the temporal side of the disc, occupying nearly its inner and lower quadrant." As the title of the paper implies, it is generally only the fibers of the optic nerve in front of the chiasm that are involved.

The principal cause is alcohol, or tobacco, alone or combined. Some authors say that it is tobacco alone, the alcohol acting only as a depressant. Of 138 reported cases, 64 were from alcohol, 23 from tobacco, 45 from tobacco and alcohol combined, diabetes 3, lead 1, and sulphuret of carbon 2. Other causes, as cold, and especially cold blasts on the face, chloral, stramonium, and syphilis, are given by Swanzy.

The failure of vision is usually so slow that the patient does not discover it until it is well advanced. Only this week a man came to me with tobacco-alcohol amblyopia, whose vision was but half of normal. The patient complains of seeing as if he was looking through smoke or a veil. The vision of the two eyes is usually about the same, which is a point in differentiating it from disease of central origin. In the beginning there is no trouble with the field of vision; later on, however, there will be discovered a central negative scotoma for colors, especially for green and red. This scotoma is usually oval in shape, with the long axis horizontal, the retina involved being that portion extending from the temporal edge of the disc to the outer edge of the macula. Later on the perception of white will diminish in this area, and, if the disease progresses, may be entirely lost. Vision is often reduced to almost nothing in this affection, but total blindness is exceedingly rare.

It is not the periodic drunkard who is liable to suffer from this trouble, but the sipper, or steady drinker, who never gets drunk. The disease is more common in the male than in the female, in the old than in the young, for reasons easily understood. Some author has stated that it does not occur in persons under twenty years of age, yet I have a patient now only sixteen years old, in whom the condition may be ascribed to the abuse of tobacco and beer.

A peculiarity of the disease is that a person may be nearly blind from tobacco-alcohol amblyopia, who under treatment may recover vision, then return to his old habits, and exceed even the abuse formerly practised, and yet have no relapse. The ophthalmoscopic symptoms, especially in the early stage of this disease, are usually negative. The optic disc may be a little hyperemic, or present what I used to call a granular, brick-dust appearance. Later on the temporal half of the disc becomes quite pale. A point in differential diagnosis that has been made somewhere—just where, I cannot now recall—is that by the inhalation of a little amyl nitrite, vision is much improved for a while. I tried this experiment last week on a gentleman about sixty years of age, whose vision was only half of normal, the result of alcohol and tobacco abuse, especially of the latter. I told him to look at the test-card, and passed under his nose a glass stopper, with a drop or so of the amyl nitrite on it, and he immediately exclaimed with much joy that he could see as well as ever. He demonstrated the fact by reading 20/15, or more than required in a test for perfect vision. How long this lasted I do not know, as I have not seen him since. Strychnin hypodermatically in a large dose may have the same effect.

As given by Samelsohn and others, the pathologic changes in the optic nerve consist in an interstitial neuritis at its axis, commencing outside of the chiasm (preferably this portion of the nerve), and leading to proliferation of connective tissue, and to secondary atrophy of a certain bundle of nerve-fibers; the changes are analogous to those that take place in the liver and brain as the result of chronic alcoholism.

As to treatment, the first indication is, of course, to correct the cause. Promises to do so are easily gotten and as easily broken. A majority of the cases, if not too far progressed, will recover with no other treatment than the correction of the cause. Again, others will need the leech, Turkish bath, and strychnin, the latter preferably hypodermatically. I usually order strychnin nitrate, gr. iv; aqua ℥j, each drop containing gr. $\frac{1}{120}$ of the strychnin. I commence with gtt. ij, and increase one drop per day until the physiologic effect is reached, which may be anywhere from gtt. xv to gtt. xl. Potassium iodid is also indicated; I often give zinc phosfid and strychnin in pill, with good result.

[1] Abstract of essay read before the Louisville Clinical Society, November, 1893.

CLINICAL MEMORANDA.

CELIOTOMY FOR ABSCESS OF THE PANCREAS; WITH THE REPORT OF A CASE.

BY JOHN E. WALSH, M.D.,
GYNECOLOGIST TO ST. ANTHONY'S HOSPITAL, DENVER, COL.

MRS. G., aged forty-seven, of good personal history, had also no hereditary taint. For four months before admission to the hospital she was practically bed-ridden. For six months she suffered from sharp burning pains in the epigastric region and complained of tenderness on pressure. Prior to this, with the exception of an occasional mild attack of pelvic peritonitis, her general health was good.

On admission to the hospital she presented a deplorable condition. Her abdomen was distended and very sensitive to touch. There was an area of dulness, extending from the ensiform cartilage half-way to the umbilicus and reaching to the left costal arch. Examination revealed an enlarged uterus, a slight bilateral cervical laceration, and a chronic endometritis. The woman was extremely emaciated; and during the few days she was in the hospital before operation, she suffered from diarrhea, going to stool at least every half-hour. Her stomach would retain little or no nourishment, and her great pain demanded frequent doses of opium. Her pulse was small, rapid, and wiry. The temperature at no time exceeded 98°; it was always subnormal in the morning. There was no history of rigors or chills; but the woman stated that previous to the onset of the diarrhea, which began about a month before coming under observation, she had fever every evening.

Nothing of clinical importance was elicited from an examination of the urine. The stools were watery, of a yellowish-gray color, and had a very strong odor. The vomited material had a greenish tinge and smelled sour. The tongue was dry and had a thick, brown coating. The examination of the lungs and heart was negative. There was no edema of the lower limbs. The pain in the epigastrium was aggravated during the acts of vomiting or coughing; but the woman experienced relief when her stomach was empty.

An effort was made to improve her general health, by carefully prepared liquid food and the administration of alcoholic stimulants, but without result.

At the earnest request of the patient, it was decided to make an exploratory incision both for the purpose of elucidating the diagnosis and with the hope that something might be done to relieve her sufferings and improve her condition. On July 16th, with the assistance of Drs. Cuneo, Hally, and Edward Walsh, an incision was made in the abdomen, beginning at the tip of the ensiform cartilage, running obliquely downward and ending about one inch above and two inches to the left of the umbilicus.

The abdominal wall was unusually vascular. On passing the hand into the abdominal cavity, a fluctuating mass could be felt beneath the greater curvature of the stomach. The great omentum was now incised, and the stomach pushed upward and the abscess-wall freely exposed. The margins of the wound were then pressed inward by an assistant and the abscess-wall stitched to them. On account of the deep seat of the swelling, I was unable to approximate the peritoneal surface with the margins of the wound. The sutures, however, answered a very good purpose, in preventing a recession of the abscess-wall after tapping, and in supporting the gauze packing, which I resorted to for the protection of the peritoneal cavity. The abscess-cavity contained over a pint of pus, in which could be seen portions of the pancreatic gland and a curdy-like substance. At the bottom of the abscess-cavity a small portion of the body and tail of the pancreas was found attached. These attached portions were soft and easily removed by cureting with the finger. The cureting was followed by a brisk hemorrhage, which necessitated a firm packing of the cavity with iodoform-gauze. The wound was now dressed in the usual manner, the bandage being pinned as tightly as possible to keep the margins of the wound pressed inward, and to prevent any undue tension on the stitches.

At the completion of the operation, which lasted about forty minutes, the patient was very weak and had to be freely stimulated. No rise of temperature followed until the third morning, when the thermometer registered 100°. After a thorough purge it dropped to normal. On the fifth day the gauze packing was removed; by this time adhesions had formed between the abscess-wall and the margins of the wound, completely shutting off the peritoneal cavity. After a copious irrigation with a hot boric-acid solution, the cavity was dusted with iodoform, and a drainage-tube inserted surrounded by iodoform-gauze.

The most prominent symptoms before operation, such as pain, diarrhea, and vomiting, disappeared within forty-eight hours after the operation, and there was a rapid and marked change for the better. During the first four days rectal feeding was resorted to, after which the patient was able to partake of large quantities of liquid nourishment without experiencing any feeling of nausea or distress. On the eighth day the stitches were removed. The fistulous tract was now well established and the abscess-cavity had contracted to about one-fourth its former size. On the eleventh day, much against my wishes, the woman got up, dressed and left the hospital, walking to her carriage without assistance.

In reviewing the literature at my command on abscess of the pancreas, I find no case reported in which surgical interference has been successfully resorted to for the relief of this condition. Cases have been reported from time to time in which the pancreas was found to be the seat of suppuration, but in the majority of these the actual conditions were discovered on post-mortem examination. "The two principal reasons for this may be found in the facts that abscess of the pancreas is of rare occurrence, and that the recognition of the lesion when it does exist is surrounded by many difficulties." (Senn.)

The recorded symptoms of this disease are very indefinite, and would scarcely lead one to a diagnosis. The emaciation, vomiting, constipation or diarrhea, localized tenderness, etc., are symptoms frequently associated with diseases of adjacent organs.

In the case here reported even the usual symptoms of pus-formation were wanting, so far as I could learn. According to Fitz, the symptoms are essentially those of peritonitis, beginning in the epigastrium; and he mentions pain, tenderness, localized tympany, and the

gradual development of a deep-seated inflammation in the region of the pancreas, as diagnostic points.

Age, says Senn, is an important element to be considered in the diagnosis, as most of the cases of abscess of the pancreas were found in patients over forty years of age. He also states that nausea, vomiting of a clear, greenish or viscid fluid, thirst, loss of appetite, constipation, progressive emaciation, and distention of the epigastrium have been observed as prominent and somewhat constant symptoms. Taken singly or as a whole, none of these symptoms can be said to be pathognomonic; in fact, they are symptoms common to many other diseases that have their origin in the epigastric region.

We are forced, then, to the conclusion that with our present knowledge of the clinical history of abscess of the pancreas we cannot make an accurate diagnosis without resorting to exploratory incision; and in all cases of doubtful diagnosis, when several of these symptoms are associated and when the health or life of the patient seems seriously threatened, I believe we are justified in giving the patient the benefit of operative procedures.

The operation will vary according to the size of the swelling. The cases must be rare wherein the swelling is so prominent as to permit the stitching of its peritoneal surface to the peritoneal surface of the anterior abdominal wall, but when this can be done it simplifies the operation.

It is to those cases in which the distance between the anterior abscess-wall and the margins of the wound is so great as to preclude the possibility of bringing them in contact that I wish more particularly to call attention. The management of this part of the operation will tax the ingenuity of the surgeon. In my own case I found this to be the most difficult step in the operation; and while the method employed as described gave good results and is an ideal way of dealing with such cases, providing the gauze packing would in all cases afford ample protection against infection of the peritoneal cavity, nevertheless if it is ever my fortune to have to deal with a similar case I am inclined to think that I would perform the operation in the following manner: After passing several sutures through the abdominal wall and the abscess-wall for the purpose of lessening the distance between their peritoneal surfaces, the wound should be packed from the bottom with iodoform gauze, which should be allowed to remain for several days, until firm adhesions had formed between the anterior abscess-wall and the margins of the incision. The abscess could then be freely incised and drained without the slightest danger of infecting the peritoneal cavity.

CIRCULAR-SAW INJURY.

BY B. MERRILL RICKETTS, M.D.,
OF CINCINNATI, OHIO.

THE patient, a white male, twenty-one years of age, fell, on July 20th, a distance of twelve feet upon a slowly-moving circular saw eighteen inches in diameter. Although the saw was not in rapid motion, it was started by the man striking the band-lever in his falling; the saw was perhaps not revolving faster than 500 revolutions per minute. He struck the saw in a sitting position, rebounding about two or three feet, falling to one side. It was found that the left buttock was more seriously injured than the right, and that there was numbness in the left toes, indicating that the great sciatic nerve had been injured. It was also found that the entire body of the penis was divided, thus allowing the urine to escape through the wound at time of micturition. The patient was treated by Drs. Titus and Halderman, and made a good recovery, with a small perineal fistulous opening. He had good use of his limb and urinated without trouble, though there was occasional dribbling from the fistula. There was complete loss of erectile power, also of sexual desire. There was congenital phimosis.

Upon being consulted I advised that the extensive cicatricial tissue be divided and that the fistula, if possible, be obliterated. To this the man consented. It was also my opinion that the man would never have the power of erection; whether or not he would have sexual desire I was not able to determine. This presents a question that must often be fully considered. Is it best to have sexual desire without the ability to gratify it? If not, would it not be best to resort to castration?

Under the influence of chloroform, a perineal section was made, and after the operation there was an uninterrupted recovery. An illustration from a photograph, showing the wound made by the saw, is appended.

I held that it was my duty to remove the entire cicatricial tissue in the line of the corpus spongiosum, bringing the two ends of that body together. Although I did not do this at the time, I suggested that it could have been done, and with the patient's consent that I would do it. However, I am not convinced in my own mind that even the removal of the cicatricial tissue and the bringing together of the two parts of the corpus spongiosum would be of any material benefit. It is, therefore, a question in my mind as to the propriety of subjecting the man to an operation that promises so little. If there were any possibility of reëstablishing the nerve-connections, it might be well to take the chances. As it is, he will never be able to propagate his kind.

Landouzy has been made professor of clinical Medicine and Therapeutics at Paris in succession to Hayem.

MEDICAL PROGRESS.

The Morbid Anatomy of Akromegaly.—SQUANCE (*British Medical Journal*, No. 1714, p. 993) has reported a case of akromegaly in a woman, thirty-five years old, who presented intense neuralgic pains through the temples and the top of the head, and also shooting pains at the back of the neck, accompanied by general languor and inability to apply herself to any prolonged occupation. Her memory was defective and her articulation slow and deliberate. There was no complaint of impairment of vision. The hands, the feet, the malar bones, and the maxillæ were enlarged. Diabetes developed, and, later on, pulmonary tuberculosis, to which the woman ultimately succumbed. Only a partial post-mortem examination was permitted. The head was increased in size, the face elongated; the malar bones were enlarged and prominent; the superior and inferior maxillæ were considerably hypertrophied, though the lower jaw did not project in advance of the upper. The eyelids were thickened and the supra-orbital ridges enlarged. The nostrils were considerably increased in size and very broad, and the ears were greatly hypertrophied. The hair was scanty and coarse, and the skin harsh and rough in appearance. The hands and feet were symmetrically enlarged; the nails were broad and the big toes large in proportion. The shafts of the long bones were not only considerably thickened, but they were also roughened, approximating the male type. The thorax was considerably enlarged, especially in the upper part; the ribs were uniformly hypertrophied, as were also the clavicles. In the lower cervical and in the upper dorsal region there was a certain amount of prominence of the spine. On opening the skull, the frontal, parietal, and occipital bones were found to be thickened, the hypertrophy principally involving the diploë. The brain weighed forty-six ounces and its membranes were normal. The pituitary body was considerably enlarged, and the canal between it and the third ventricle was patent. The optic nerves immediately in front of the commissure were much flattened, especially the right, which was exceedingly soft and tearing easily. The thyroid gland was enlarged and weighed nearly two ounces. The thymus gland was persistent, the left lobe being hypertrophied and passing behind and to the left of the manubrium sterni. The gland measured nearly two inches in length and weighed one ounce. Its surface was lobulated, its consistence pulpy, almost diffluent, and its color a brightish-pink.

A Peculiar Occupation-Neurosis—Trombone-player's Cramp.—FRANCIS (*Lancet*, No. 3663, p. 1184) has reported the case of a trombone-player, twenty-nine years old, who presented a form of spasmodic wry-neck that had been present for eight months. At first the spasm was slight in character, and only noticed when the man was very tired, after a long evening's work. It gradually increased in frequency and severity until he was obliged to discontinue his employment. For two months the spasm had been almost continuously present, not only by day, but also by night, and interfering with sleep. Varied treatment had failed to give relief. The patient was highly nervous and excitable, and for some weeks had suffered from delusions that he was ill-used, laughed at, and followed on the streets by persons who mockingly called the attention of others to his wry-neck. There was no facial spasm or spasm of any other muscles than the right sterno-mastoid and right trapezius. These muscles were in a state of tonic spasm, which prevented the head from being held straight, its usual position being inclined to the right side. Every few minutes these muscles were affected by clonic spasm, by which the head was drawn strongly toward the right shoulder. There was severe cramp-like pain in the muscles during the clonic spasm, which occurred throughout the whole day and night, and even during sleep. They were most frequent and severe when the patient was tired or excited, and were found to occur during the slighter stages of chloroform-narcosis. There was almost complete anorexia and insomnia. Division of the spinal accessory nerve was proposed, and performed at the point where the nerve is about to enter the sterno-mastoid muscle. During the first six days after the operation the patient was comfortable, and completely free from the slightest spasm. At this time; however; a slight twitching of the sterno-mastoid was noticed for a few hours, but unattended with pain. The patient, however, became wild and irritable, and his previous delusions returned. From this maniacal outbreak he soon recovered. Thereafter slight twitching of the sterno-mastoid could be induced by having the patient look steadily at an object held above the level of the eyes. On resuming his occupation it was found that the twitching returned. In view of this evident relation the patient was advised to learn to play upon some other instrument than the trombone, and upon acting on this advice the spasm never reappeared.

Partial Symphysiotomy.—MÜLLER and VAN NOORDEN (*Berliner klinische Wochenschrift*, 1893, No. 48, p. 1163) have reported the case of a woman, thirty-seven years old, pregnant for the fifth time and presenting the appearance of a dwarf, with evidences of previous rhachitis. The first and second pregnancies had been terminated by craniotomy; the third was terminated artificially, at the end of the seventh or beginning of the eighth month; and the fourth in the thirty-second week, but in both instances the children succumbed. The distance between the iliac crests was 8.6 inches; that between the anterior superior iliac spines 9.8 inches; and the conjugate measured 2.75 inches. The woman was desirous of having a living child and, accordingly, labor was induced in the thirty-second week of the fifth pregnancy. The head, however, would not descend below the pelvic inlet, and the condition of the woman becoming alarming, symphysiotomy was decided upon and undertaken with great care. After the symphysis had been but partially divided the head began to descend, and in a short time, with the aid of the forceps, the child was delivered, the wound being meanwhile packed with iodoform-gauze. The child was asphyxiated and could not be resuscitated. After expulsion of the placenta, which followed almost immediately after the birth of the child, sutures were introduced and a wide band tied about the hips.. The latter was retained for but three days. At the end of three weeks the woman was up and about. For a few days after labor there was considerable meteorism and sensitiveness of

the uterus to pressure, with transient slight elevation of temperature. The lochia were offensive, and it was found that a vesico-vaginal fistula had been formed. This was in due time operated upon, with success.

Argyria from the External Application of Silver Nitrate.—Olshausen (*Deutsche medicinische Wochenschrift*, 1893, No. 47, p. 1206) has reported the case of a woman, forty-three years old, who came under observation on account of extensive burns of the first and second degrees. For a month dressings of bismuth were applied; then applications of a one-tenth per cent. solution of argentic nitrate were made to limited areas upon the arms and back. Shortly afterward an intense stomatitis developed, in the lesions of which streptococci were found. After the lapse of a further seven weeks, transplantation of skin was practised upon the right forearm, and as the wounds upon the back had healed, only the left arm and the right upper arm were wrapped in the solution of argentic nitrate. Some days later the stomatitis recurred and the silver applications were permanently discontinued. Upon inspection areas of bluish-black discoloration were seen upon the mucous membrane of the cheeks and upon the gums; the lower lip presented an irregular zone of similar discoloration and some of the lacunæ of the tonsils displayed bluish-black points. Similar spots were also observed on the inferior surface of the tongue, to either side of the frenum. The condition of the patient grew progressively worse; the bluish discoloration extended; ulceration of the inner aspect of the cheeks took place; diarrhea set in; convulsions occurred, and death ensued. Upon post-mortem examination, in addition to those already noted, pigmentary deposits were also found in Douglas' cul-de-sac and upon the posterior wall of the pharynx, while the colon was the seat of a chronic pigmentary ulcerative inflammation. Chemic examination of tissue from the colon and microscopic examination of a portion of the lower lip in each instance disclosed the presence of silver.

THERAPEUTIC NOTES.

Thyroid Feeding in Exophthalmic Goiter.—Owen (*British Medical Journal*, No. 1718, p. 1211) has reported the case of a laborer, forty-six years old, who came under observation on account of an attack of diarrhea, and who for twenty years had had swelling of the neck and a protrusion of the eyes, together with palpitation and breathlessness. The expression of the face was anxious, a white band of sclerotic was visible, the upper lips did not follow the globe in looking downward, and passing the hand before the face did not induce winking. There was visible throbbing in the neck, and the pulse was 126. The apex-beat of the heart was displaced to the left, but no adventitious sound could be heard. The diarrhea was controlled by opium. Then quinin, iron, digitalis, and arsenic were given for two weeks without benefit. Then a quarter of a lobe of sheep's thyroid gland, to be taken daily, minced and flavored with little salt and vinegar, was prescribed. Through a misunderstanding one-quarter of a pound was administered for two days, giving rise to dyspeptic symptoms—nausea, eructations, vertigo, and insomnia—and the face and legs swelled. The thyroids were withheld for a week, and these symptoms passed off, when the administration of the dose intended was begun. Steady improvement ensued, so that the man became able to take up laborious work that he had not undertaken in many years. The exophthalmos became scarcely perceptible, and the swelling of the thyroid diminished, while the pulse declined to 76 and the arterial throbbing disappeared.

Salts of Aluminum in the Treatment of Diseases of the Nose and Throat.—Heymann (*Monatschr. f. Ohrenheilk., etc.; Wiener med. Presse*, 1893, No. 48, p. 1894) has reported the results obtained from the employment of salts of aluminum in the treatment of diseases of the nose and throat. Aluminum salicylate, or salumin, is said to be insoluble in water and in alcohol, but soluble in alkalies. With ammonium it forms a neutral double salt, which is soluble in glycerin and in water. This preparation has been found to be an excellent astringent. It is irritating to the mucous membranes of the nares, and is thus indicated in the dry inflammations of the naso-pharynx. Either of the preparations may with advantage be employed in powder by insufflation, in cases of ozena. Applications to the pharynx of a solution in glycerin may be made by means of a brush. Aluminum tannate is also insoluble, while the tannotartrate is soluble. The latter is indicated whenever an active non-irritant astringent is desired. It may be employed by insufflation, as a gargle, by inhalation, or it may be applied in solution by means of a brush.

Quinin for Pertussis.—Baron (*Berliner klinische Wochenschrift*, 1893, No. 48, p. 1165) praises warmly the employment of quinin in the treatment of pertussis, particularly when pneumonia occurs as a complication. He prescribes thrice daily one-seventh of a grain for every month of life, and a grain and a half for every year. Six o'clock in the morning, two in the afternoon, and ten at night are preferred as the hours for administration. More than six grains three times a day have not been found necessary even for children older than four years. After decided improvement has manifested itself, the dose may be administered but twice a day; then the dose may be gradually diminished and finally but one dose given daily. To very young children the drug was given dissolved in a teaspoonful of water; to older children in the form of wafers.

For Acute Gout.—

℞.—Ext. colchici. acetic. . . . gr. x.
Pulv. ipecac. comp.
Pulv. digitalis . . āā gr. xij.—M.
Ext. colocynth. comp.
Ft. pil. no. xij.
S.—Take one twice or thrice a day.

Practitioner, No. 306.

For Morphinism Kochs (*Ther. Monatsh.*, Nov., 1893, p. 539) recommends the subcutaneous injection twice daily of atropin, gr. $\frac{1}{300}$, with which in his own practice he conjoined morphin, gr. $\frac{1}{3}$.

For Epithelioma Morau (*Journ. de Méd. de Paris*, No. 43, p. 506) recommends the topical application of a saturated solution of picric acid in water.

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SATURDAY, DECEMBER 30, 1893.

FOREIGN DEPOSITS IN THE LUNGS.

As to particles of dust, and the like, being found in the lungs there is now no doubt; yet the point was formerly contested. For example, VIRCHOW wrote "that the black deposits in melanotic lungs (deposits, be it noted, distributed freely, and not imbedded in cells) were not, as some supposed, collections of carbon, but substances totally distinct from the vegetable character."[1] And again: "It might easily be seen from the fact that coal-dust colors the sputum gray or black, that it has by the same token been expectorated in the bronchial mucus."[2] TROUSSEAU,[3] another effective witness on this side, wrote: "The cause of melanosis is nothing more than 'une aberration du pigment,'" that is, of course, of the blood.

It is hardly necessary, and surely not very profitable, to go any deeper into a controversy that was fought out with the usual prolixity. Those who wish to do so should consult an account of it by an excellent author.[4] The question of chief consequence is whether or not deposits of foreign bodies have really been found in the lungs, and, if so, how were they composed and situated. LEWIN[1] and RUPERT,[2] and not a few others, have shown by experiment that under some conditions dust may be plentifully deposited in the lungs. For instance, the animals of RUPERT's experiments breathed an atmosphere of coal-dust through T-shaped tubes fixed in their open windpipes. These tentative efforts were followed by a very handsome result, and an enormous quantity of the dust was found in the bronchi, bronchioles, and alveoli. LEWIN adopted a simpler and less redoubtable method. He kept some animals confined in a cage densely filled with dust, where they were allowed to breathe naturally. The post-mortem examinations gave a similar, though not so striking a result as RUPERT's. And these results have been confirmed by the most respectable authority.[3]

But, turning from this view of the matter, let us examine the clinical records for human cases. We shall find many examples, deeply and critically studied, of the fortuitous inhalation of dust, such examples, we mean, as occur in workingmen in the habitual pursuit of their trades. We shall attend only to those cases in which an autopsy has furnished us with the data for an exact judgment. For this we conceive to be a more accurate, not to say a more soundly critical, method than one in which a diagnosis is made from the history and symptoms merely, and no proof afforded of the presence of dust in the lungs. Nor is it always safe to assume that pulmonary disease has been caused by a man's pursuing a confined occupation.[4] An acute and patient observer,[5] indeed, has made this assumption, and compiled extremely valuable statistics of many thousand cases to show the influence of occupation and environment in the causation of pulmonary tuberculosis—who, by arranging, rearranging, and comparing his data enables us to see the object from every point of view, yet, because he assumes that the same cause is at work in every case, comes to some conclusions that neither he nor anyone else can accept. Thus, his statistics show, to his utter surprise and disbelief, that a cold damp atmosphere is less injurious than a warm dry one. Secondly, some of his best tables are vitiated by the prevailing error, as in the following:

[1] Archiv für path. Anat., 1847, p. 466.
[2] Ibid., p. 466.
[3] Archives générales, 1828, p. 182.
[4] Zenker: Deutsches Archiv f. klin. Med., Bd. ii.

[1] Die Inhalations-therapie, pp. 22–87.
[2] Archiv f. path. Anat., Bd. lxxii, p. 14.
[3] Experimentelle Untersuchungen über Kieselstaub-inhalation, Archiv f. exp. Path. u. Pharm.
[4] Putegnat: Bulletin de l'Académie, t. xxv, p. 36
[5] Annales d'Hygiène, t. xi, 1834. pp. 5–69.

Proportion of pulmonary tuberculosis among workingmen surrounded by an atmosphere charged with detritus:

Proportion of Cases per 1000.

Hospitals:	Geneva.	Paris.
From soft bodies . . .	127	280
From hard bodies . . .	120	210
From very hard bodies . .	290	525

"This table shows," he says, "that the detritus of hard bodies is more injurious than that of soft ones." To us it does not show this directly; and the conclusion is only partially true. For, if we inquire what the results of post-mortem examinations show (which is the test or criterion that we shall use throughout this article), we shall find that deposits of hard substances in the lungs, such as flint and emery, are very fatal, and deposits of cotton and woollen filaments not less so. LEWIN[1] notes the extraordinary frequency of pulmonary tuberculosis among upholsterers. Among these workpeople 100 per cent. of the deaths were from this disease. It is not less curious to find that stonemasons and makers of wadding alike suffer seriously from pulmonary complaints. On the other hand, workers in coal, stokers and chimney-sweeps are a remarkably healthy set of men. It is even believed that deposits of carbon in a fine state are beneficial; and the pathologic studies of GUILLOT and LEWIN render this supposition extremely probable. And we might add that another authority[2] has come to a similar conviction.

It might assuredly be expected that bits of lead or steel, for instance, should do more harm than a fine substance like soot, which, moreover, does not appear to be irritating, as lead and steel unquestionably are on account of their chemic properties. Nor does it seem to us at all fanciful to suppose that sharp surfaces are more destructive than smooth, angular than round, heavy particles than light. And such indeed we find on examining the abundant records to be the truth. A particle of charcoal, with its sharp, prismatic needles, or a bit of stone, with its "horns," may lodge in an alveolus and split it open. TRAUBE'S case is a beautiful instance of this kind. We extract from the history of it a passage bearing on the matter in hand: "These black particles (*of charcoal*) were so completely imbedded in cells that the cell-walls were bored through."

It is impossible to explain in a more striking manner the kind of injury, and the curious manner in which it is done. What follows such an injury has been described in the best experimental study of this subject known to us. VON IUS,[1] the author of the paper in question, investigated the action of quartz dust, the particles of which are acute-angled polygons of four and five sides. "This dust would enter the alveoli, be taken up by the cells thereof, and migrate thence into the lung-tissue."

In this manner an "inflammation," best described as "catarrhal," would arise; and the "exudate coming chiefly from the cells would flow into the lung-tissue, and remaining there would cause an interstitial pneumonia." A single example, occurring among the animals of his experiments, furnishes a good picture of an affection that has often been observed in workingmen. It is really this affection, and not tuberculosis (except secondarily), that is caused by inorganic deposits. "In one case a dog died after inhaling the dust for twenty-eight days, and without showing any particular disturbance except some cough and languor during the last two days." A section of the lungs showed an "extensive pneumonic infiltration, from which only the apices were free." In man, a very striking example of this affection is described by DUPONT.[2] The patient, a worker in emery, suffered from bronchitis and from pains resembling those of tuberculosis. DUPONT, not detecting dulness at the apices, or any signs which he judged distinctly characteristic of tuberculosis, hesitated to pronounce a diagnosis, save that the lungs were apparently affected in some manner by the emery dust.

According to KUSSMAUL this form of pneumonia is caused by "mechanical irritation."[3] Particles of sandstone, he observed, were very commonly the cause; and it is worthy of remark that these particles compose in large part the dust of streets. A cavity may form, either from a chronic circumscribed pneumonia, or secondly, from a partial gangrene of the lung.[4] In the latter case, the cause is usually a deposit of charcoal, and hence the name "*anthracosis.*" As to cases of the first kind, cases that are variously and somewhat pedantically termed "*pneumonokoniosis*," "*siderosis pulmonum*," "*phthisis siderotica*," etc., we proceed to adduce more

[1] Die Inhalations-therapie, pp. 22–87.

[2] Vernois: Annales d'Hygiène, 1858, t. ix, p. 358.

[1] "Experimentelle Untersuchungen über Kieselstaub-inhalation," Archiv für exper. Path. und Pharmakologie, Bd. v, 169.

[2] Gaz. des Hôpitaux, 1847, t. ix, p. 351.

[3] Deutsches Archiv für klin. Med., Bd. ii, p. 91.

[4] Seltmann: Ibid.

evidence to show that it is the sharp crystalline particles that act so disastrously. ZENKER[1] reports three cases with elaborate post-mortem examinations and plates, and MERKEL[2] two. Under the microscope, ZENKER discovered crystalline plates of oxid of iron, which he describes as "Hörnchenkugeln," that is, "little horned particles," 10–26 μ in size. These were deposited for the most part in the lobular and infundibular septa. MERKEL'S cases are reported in an equally elaborate manner, but we cannot particularize them further than to mention that he saw in the alveoli the crystalline plates of oxid of iron of 0.075–0.125 mm. in size.

These were cases in workingmen. But to what extent do people of ordinary experiences and casual occupations suffer? To what extent is the dust of streets and rooms received into the lungs? An exact observer[3] has remarked that we always find traces of sand, the common element of dust, in the lungs of adults. And since, says he, we do not find any in the newly born, we may infer that it is always inhaled. Another observer[4] asserts that we may reckon on finding some sand in the lungs from three and four years upward.

It is, therefore, extremely curious that more mischief is not done. And when we consider the amount of dust in the air, to say nothing of the enormous numbers of microbes, and when we reflect that it is inevitable that no mean quantity must be taken in with the breath, the matter appears even more wonderful. It is probable either that we must ascribe a large number of cases of pneumonia to such causes or reduce our notions of the danger. It may be, too, that the lungs have some way of getting rid of foreign bodies. To conclude: the chief danger appears to us to arise from the weight, shape, physical and chemic properties of the particles breathed. We believe that we have not dwelt too fancifully on this point, and we are satisfied that the recorded cases and post-mortem examinations on which we have exclusively depended tend to support, rather than oppose, our opinion.

THE COST OF SANITARY NEGLIGENCE.

THE following table, according to Secretary CARTER, of the Maryland Board of Health (as reported by *The Scientific American*) shows the mortality of the cities of this country and Europe having a population of more than 100,000:

	Population.	Deaths.	Death-rate per 1000.
London	5,849,104	55,895	19.11
Paris	2,424.705	28.675	23.61
New York	1,801,739	23,856	26.47
Berlin	1,669,124	17,181	20.58
Chicago	1,458,000	13,590	18.95
Vienna	1,435,931	18,005	25.07
Philadelphia	1,115,562	12,249	21.95
Brooklyn	978,394	10,682	21.84
St. Louis	520,000	4,802	18.47
Brussels	488,188	4,359	17.86
Boston	487,397	5,816	23.88
Baltimore	455,427	4,806	21.10
Dublin	349,594	4,735	27.05
San Francisco	330,000	3,006	18.21
Cincinnati	305,000	3,000	19.67
Cleveland	290,000	2,538	18.19
Buffalo	290,000	2,361	16.28
Pittsburg	255,000	2,923	22.92
New Orleans	254,000	3,598	28.72
Edinburgh	267,000	2,572	19.22
Milwaukee	250,000	2,000	16.00
Louisville	227,000	1,630	14.80
Minneapolis	209,000	1,004	9.60
St. Paul	155,000	745	9.61
Christiania, Norway	156.500	1,385	17.75
Denver, Colorado	150,000	871	11.61
Rochester, N. Y.	144,834	1,291	17.87
Rheims, France	105,408	1.503	28.62

There is no more accurate gauge of the state of civilization actually attained by cities than their comparative mortality tables. It is the object not only of medicine to save and lengthen human life, but it is also the supreme object of the entire governmental and social mechanism. Hence every man interested in social progress, be he physician, hygienist, Christian citizen, or simply good citizen, watches the death-rate as constantly and as carefully as the engineer watches his steam-gauge, or as the clinician watches the thermometric reading. It is the precise indication of the success of science and of civilization. In a general way, subject to inconsiderable exceptions and modifications, the higher the death-rate the greater the social and governmental sins of selfishness and recklessness, the greater the indifference to the hygienic conditions of life.

The most striking fact that appears in the table is the healthfulness of London as compared with other great cities, Chicago excepted. With a population twice as great as that of Paris, and three times as great as that of New York, her death-rate is wonderfully less than that of either. There is no reason except a disgraceful reason why New York allows a death-rate of 7.36 higher than that of London. What does this mean except that New York permits the unnecessary deaths of 6630 of her citizens every year?

[1] Ibid. [2] Ibid. Bd. vi, p. 206.

[3] "Aschenbestandtheile der Lungen u. Bronchialdrüsen." Deutsches Archiv, Bd. ii, p. 91.

[4] Arlidge: Brit. and For. Medico-Chir. Rev., 1875, p. 438.

If it is thought that it may be unjust to statistically compare cities as far apart as London and New York, it is certainly proper to compare New York and Brooklyn. With a difference in death-rate of 4.63 this leaves New York criminally chargeable with 4171 additional and unnecessary deaths each year. As compared with Philadelphia there are 4071 more deaths to her debit; and as compared with Chicago, the figures reach the appalling number of 6774. There is certainly no good reason why the mortality of Philadelphia and of Boston should be higher than that of Chicago, but the table shows that Philadelphia kills proportionally 1673, and Boston 1200 more of her citizens each year than the city that is credited with drinking her own diluted sewage. It is plain that there is something radically wrong about all this. Death-rate figures are surely among those that do not lie. It may not be quite just to compare the awful death-rate of New Orleans with the splendid showing of Minneapolis and St. Paul, but no such extenuating circumstances as are to be considered in reference to the Southern city can be adduced to excuse the glaring differences between the principal Northern and Northeastern cities of our country. These differences are a profound reproach to City Boards of Health, to the city governments, and to all public-spirited citizens. New York is in every way better situated than Chicago as regards easy sanitation, and in many ways possesses such excellent natural advantages over the Western city that her present death rate is a disgrace that cries out against her.

It is absolutely undeniable that these deaths are avoidable. If the city governments of American cities would spend money *as freely and as wisely* as London has done, the brutal death-rates and slaughter of her citizens would lessen just as they have lessened in London. If London cared as little for the lives of her citizens as New York seems to care for hers, there would die in that great city every year 21,524 people more than at present die. Let us take the useless deaths of the five largest Eastern cities of the United States as compared with Chicago:

AVOIDABLE DEATHS.

Boston as compared with Chicago	1200
Philadelphia " " "	1673
New York " " "	6774
Brooklyn " " "	1413
Baltimore " " "	490
Total	11,550

This is the cost of criminal negligence of the known laws of health in only five of our cities.

Let us estimate the financial value of this loss. The average rate of American wage-earners at the lowest estimate is about one dollar a day. That is, one can buy the labor of the average American citizen for not less than $300 a year. According to insurance life-tables, the average length of our life is about forty years. Our working or productive period is about half that time, and the average market value of one of us is, therefore, twenty times $300, or about $6000. Put up for sale, one of us is approximately worth $6000 in the labor market. Now, let us allow of the 11,550 killed in five cities by carelessness and neglect, one-third of the number as having passed the laboring age, and therefore to be thrown out of this accounting. The remaining 7700 sacrificed to short-sightedness are thus seen to be worth in the labor market over forty-six millions of dollars.

But this is by no means all the loss; as for every death DR. FARR estimates that two persons are on an average continuously ill, *i. e.* there are two years of sickness for every annual death. With the 11,550 needless deaths, therefore, there are also each year the equivalent of 23,100 years of needless illness. Again estimated in money values, this means in lost time alone, $6,930,000, besides the bills of the doctor, the druggist, the nurse, and all the rest.

And yet when the city fathers are asked for a few thousand dollars for meat-inspectors and milk-inspectors, for new and necessary sewers, for an unpolluted water-supply, or for other measures of preventive medicine, the request is refused, or acceded to with such crippling stinginess as to be ludicrously inadequate.

Were it not for the possible charge of exaggeration, one might add that if our present knowledge of sanitation and prevention were only applied, our death-rate might be reduced by one-half.

But leaving out such a possible hoped-for reduction from future applications of sanitary science, we may consider as a national crime our failure to lower the death-rate in some and in most cities to the point reached by other cities. In only five cities, and estimated in crude financial losses, we have seen there is a squandering of some $53,000,000. Extend the calculation, easily made, to the whole country, and it is recognized that we are wasting several hundred millions of dollars' worth of human lives each year by our recklessness and stupidity.

Thousands or millions of people become morbidly absorbed in a single murder or a murder trial, ignorant, or, if not so, indifferent to these thousand social and governmental murders. Statesmen and political parties are engrossed in questions relating to a few million dollars' worth of silver ore, a few Pacific Islanders, or a bit of tariff legislation, all together of immeasurably less importance financially, or humanly, than the needless waste of human lives about which they do not care a blue bean. The medical profession heroically works to save a few thousand sick while the community goes on blunderingly and savagely killing, and making sick, by the millions.

EDITORIAL COMMENTS.

The First Collegiate Protest against Foot ball.—It is with profound gratitude and satisfaction that we chronicle the first signs of courage and dignity that have been shown by any American College as regards the foot ball craze. In future years it will be to the undying honor of THE UNIVERSITY OF VIRGINIA that she has been the first to raise her corporate voice in clear and manly warning, and in determined opposition to the plain downward tendency. The faculty has issued a circular clearly pointing out the wrong, and advising students, parents, and guardians against the evils of the game, and especially of the intercollegiate contests. It is, in fact, the intercollegiate game that is the root of the whole mischief. Abolish this and the psychologic professors and eminent D.D.'s will at once be able to know what all the world knows, and to do what all the world is ashamed they are not doing. Brutality will then disappear from local college games, and the vaunted utilities and splendors of the game as it has been will be at once recognized as an excuse for a long step toward barbarism, as advertising dodges, and as downright bosh. Mr. William A. Bancroft, Mayor of Cambridge, Mass., in his day the most prominent oarsman in Harvard College, says: "I am opposed to all intercollegiate games. They detract from the purpose for which young men are sent to college. If two business men spend four hours per day playing chess or some kindred game, it is certain their business will suffer. That is exactly the condition of intercollegiate athletics." From the circular of the Faculty of Virginia we quote a few paragraphs concerning the intercollegiate game:

"They are compelled to regard this practice as one which has consequences almost wholly evil. The aggregate loss of time is considerable and the mind of the student is distracted from his collegiate duties, and returns to regular habits of application only after still greater loss. The outlay in money is not unworthy of account. Temptations to evil living arise, which are not met in the wholesome and regular routine of college life; and while careful inquiry has convinced us that our students conduct themselves as a rule with praiseworthy decorum, both at the University and abroad, instances are not wanting where individuals have so acted as to bring discredit upon themselves and reproach upon the school. We have been repeatedly informed by the managers that this escort is not desired, and that their presence and gate-fees poorly compensate the team for disorders, of which they have sometimes been the occasion.

"As a plan more consonant with the spirit of this University and, we trust, of better ultimate effect, it has been determined to appeal to the good sense of the students and to the affecionate solicitude of their parents and with respectful insistence to urge that this evil be eradicated or at least largely abated. Students who have come to years of discretion are requested to abstain from this relaxation in the interest of collegiate order, as well as for their personal good. The parents of others are advised rigorously to withhold consent to such excursions. The Faculty earnestly trust that this expression of their serious opinion will receive serious heed.

"All boyish and manly sports have in them an element of danger; it is the price which mankind sees fit to pay with cheerfulness for virile indifference to physical peril. But careful guard is to be had at this point, and we shall not hesitate to demand the correction of features which lead either to moral or to physical excesses."

This noble and dignified position should at once double the number of students in the University of Virginia, and there are numerous indications that sensible parents are preparing to give a stinging rebuke to colleges that have sought to advertise for students by means of semi-professional gamesters. To thus advertise for students to educate in intellectual things, because of success in winning so-called athletic games, is an illogicality most glaringly absurd.

As we go to press we hear also that the Faculty of the Kansas State Normal School has forbidden the game in future.

Mr. Stead's Remarkable Doings.—Our wonder is ever called forth afresh at the unlimited impertinence and successfulness of the mephistophelean quack. However crushed by exposure, however deep the disgrace, he rises phenix-like from the ashes of one diabolic scheme to start anew with another still more preposterous and brazen. The stupidity and gullibility of human nature is always equal to the challenges of its inordinate masters. The career of Stead is in evidence. He should have realized a satisfying fortune from the Mattei cancer-cure swindlers. Simple, plain, unadulterated water was sold at about a dollar a bottle under the name of white, green, and red electricity, until the Medical Investigating Committee cornered him up, and he was forced to confess that his partners were unmitigated scamps. *Food and Sanitation*, a brave English journal, says the thieves derive a profit from the Mattei "cures" of $500,000 a year. How sincere was his "shame" and his "denunciations" is shown by the fact that the English agent of the Mattei swindle is a certain A. J. L. Gliddon. Stead is now pushing a scheme to get 100,000 persons to subscribe $5 each to found a new paper. The first number of the new paper is largely devoted to editorial interviews and puffs of the Mattei agent, Gliddon, and his quack cures, but especially to a "drunk-cure," also worked by Gliddon. The Pooh-Bah Gliddon as drunk-curer demands $100 from his dupes, boards and treats them for a month at a net profit from the one hundred patients he says he already has, of something like $6000 a month. The crowning touch of marvel is not wanting in the fact that Stead announces that his new journal and his personal rôle in life is "the rooting out

of mean fraud, and the punishment of the scoundrels who would steal under the cover of business." Amazing products of nineteenth century civilization are these Steads and Steadisms! But it is still more amazing that poor, stupid, deluded human nature never tires of welcoming and loving them.

Exemption of Charges for Medical Services and Nursing.—The matter of exemptions is one which is more or less different in different States, depending altogether upon the wording of local statutes. In Texas, where the statute, among other things, exempts from attachment or execution, and every other species of forced sale for the payment of debts, "current wages for personal services," it has been held that the fee of an attorney is not exempt from garnishment when he has not been hired for his services by the day, week, month, or year, to be paid at the expiration of the time for which he was hired, and not in proportion to the business done. But the same court held that the fees of a physician, when he was employed, and his compensation fixed per diem, were exempt. And now the Court of Civil Appeals of that State, in the case of Dempsey *vs.* McKennell, holds that when a nurse is employed during an attack of sickness under promise to be paid well for his services, though there is no agreement fixing the compensation to be paid, either for the entire service, or by the hour, day, week, or month, the amount due him is to be classed as current wages for personal services, and is exempt under such a statute as the foregoing. The mere circumstance that the rate of compensation was not agreed on in advance ought not, the court says, to take the case out of the exemption. In nursing, the person employed was actually occupied by the day, and his right of compensation accrued as he served, being measured by customary or reasonable rates rather than by express contract. Such wages being exempt, it was also held that the employer could not afterward buy up a debt due from the nurse to a third person and set it off against his promised remuneration.

Unauthorized Use of Physicians' Portraits by Advertisers.—We hope all good physicians will follow the example of Dr. Joseph D. Bryant, of New York, in putting in force the full power and penalties of the law against the unauthorized use of physicians' portraits by unscrupulous advertisers. Dr. Bryant's indignation is more than justifiable in the case of a calendar-issuing advertiser, who also inserted portraits of a number of other prominent physicians, and especially because puffs of the proprietary preparation, cunningly placed below the portraits, make it seem as if the men whose portraits appeared above had thus actually praised and recommended the preparation. This is an old dodge, a sneaking way of deceiving and yet of escaping the law. Some time ago a similar method was pursued by an advertiser, who headed his circular "*From Medical News*," leaving it possibly doubtful whether the things quoted were simply medical news gossip, or were genuinely from the columns of the journal, MEDICAL NEWS.

The Foot-ball Injuries in the United States, during the season just closed, have been in part collected by a New York newspaper. We have epitomized them as lows:

Deaths	8
Fracture of the leg	6
Double fracture of the leg	1
Fracture of the thigh	1
Fracture of the arm	1
Fracture of the collar-bone	1
Dislocation of the shoulder	1
Dislocation of the patella	1
Especially serious injuries	5
Sundry disabling injuries	119
Total	144

What would be the proportions of this list when swollen by the "accidents" not reported, or by the mischiefs to develop by and by?

Credit to which Expert Testimony is Entitled.—It is a well-established rule of law, according to a recent decision of a New York court, that the testimony of experts is entitled to the same credit, and is to be tested by the same rules, as are to be applied to the testimony of other witnesses, and should have weight according to their qualifications and opportunities. While their opinions are not conclusive, they are to receive so much weight as a jury may deem them entitled to, when viewed in connection with all the other circumstances, and they must also be predicated upon the facts established by the proofs in the case.

To Escape Vaccination.—The unpopularity of vaccination in England, amongst parents, is said to have led to a new form of offence, consisting in falsely declaring the place of birth on registering the child. By this means the vigilance of the vaccination officers has been to some extent defeated. To counteract this the Registrar-General recently had three matrons prosecuted and fined at Marleybone.

SELECTIONS.

THE USES OF THE CODE.

THE vast majority of the medical profession is, I would maintain, notwithstanding discreditable cases that are sometimes brought to light, and even the medicated-wine scandal, well able to withstand the seductions of charlatanry, and—sound in conscience—to pursue the path of rectitude without monitions or fear of penalties. But for the weaker brethren—and there are weaker brethren in all professions—a code of honor supplemental to the general ethical code is an admirable tonic. And, indeed, for the profession as a whole, such a code has its value, raises the standard of work and exalts the sense of duty. The sustaining influence of a code of professional honor, in moments of supreme trial, was brilliantly illustrated in the Charge of Balaklava, and in the wreck of the "Victoria" only three months ago, when bands of men were dauntless, steadfast and heroic, standing face to face with sudden death; and the same influence is, less conspicuously but not less truly, manifested in the self-denying devotion with which medical men carry on daily their incessant guerilla warfare with disease. The moral qualities

displayed by the profession should, I think, be its charter to public esteem, and protect it from the humiliation which the present widespread patronage of quackery really amounts to. For quackery is patronized in high places, and is supported not only by the dull and ignorant, but by the presumably educated and intelligent. It flourishes, no doubt, in our great manufacturing towns like Sheffield, but the very hot-beds of it are our fashionable watering-places and health-resorts, and I am assured that, while our skilled artisans are least of all given to quackery, our learned clerics are most addicted to it. Well, I think our learned clerics should seriously reflect that in giving countenance to the nostrums of the empiric, they exhibit a credulity and superstition that must seriously impair their usefulness in their sacred calling with all thoughtful men. Great may be the faith but small must be the wisdom of the man who believes he derives benefit from a non-electric belt! What exegetical insight is possible in him who swallows patent pills? They should remember—these learned clerics—the commendation of the Bereans, and search the Scriptures—the Scriptures of Science and common-sense—to see whether these things be so.

Above and beyond, however, any special code of honor appertaining to the medical profession, there is the general code of ethics to which that and all professions are amenable, and as regards that general code, I would say that medical practice is daily demonstrating to those engaged in it its reasonableness and wisdom. To those who faithfully pursue it, medical practice affords an ethical training and discipline of the best kind; it opens a refuge from pessimism in the opportunities it gives for the relief of sorrow and suffering; it unveils, in the tender ministrations of the sick-room, some token of the angel as plainly as competition discloses vestiges of the tiger and the ape, and it fosters that wide sympathy that yields hope for the future of our race. "The man shall die," said David, not because he did this wrong, but "because he had no pity." Surely one of the most moving of texts is this: "He had compassion on the multitude," which, translated into my native language as it has been by Scott Riddell, becomes even more expressive in the words, "He was wae for the folk." To bread-winning industry, to an honorable ambition, the medical man must add compassion for the multitude, if he would make his work fruitful to his patients, to the public, and to himself.—Sir James Crichton-Browne in address at opening of the Sheffield (London) Medical School.

PHYSICIANS AS PRESCRIBERS OF NOSTRUMS.

There is a disease that has eaten like a cancer into our profession, and has weakened its constitution in many points. It is a contagious disease, and when once contracted it is hard to cure. It seems to enter the very life of the physician and finally causes his death. He carries the disease to his patients, and when they become infected they leave him and give it to others. The physician may keep this affection a secret for a time, but sooner or later it will come to light. This disease has various names given it, but it is best known as the patent-medicine humbug. There is nothing so detrimental to the honor and dignity of the medical profession as the fact that many of our physicians will prescribe a medicine of which they know literally nothing, except that it was said to have been discovered and used by the Indians of the West or the negro slaves of the South, and that it is dispensed under a high-sounding name, is protected by a trade-mark, and is recommended for every disease under heaven. All good and effective medicines have a very limited scope of usefulness, and whenever a physician becomes too negligent to study his cases and prescribe well-known and tried remedies for definite pathological conditions he is no addition to his profession. As long as pure drugs are manufactured, as long as scientific works on materia medica and therapeutics are written, as long as ample facilities for acquiring a knowledge of medicine exist, there is no excuse for the physician acquiring the habit of prescribing patent medicines. The physician who does form such a habit becomes a self-constituted and unremunerated agent to advertise the nostrums of the unscrupulous manufacturer, and assist in deceiving the public.—*Address to the Profession and the Public by* Dr. J. T. Graham, *of Wytheville, Va.*

REVIEWS.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M.D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania, etc. Sixth edition, enlarged and thoroughly revised. With a colored plate and 656 illustrations in the text. 8vo, pp. 1166. Philadelphia: Lea Brothers & Co., 1893.

When a scientific work passes through six editions in a little over twenty years, this fact may by itself be accepted as evidence that it has been found to possess substantial merit. In the present instance there can be no question of the soundness of the verdict of approval. The author is widely known as perhaps the most scholarly of American surgeons. Like his other contributions to the literature of his profession, this book is written in a clear, accurate, and forcible style, and contains well-weighed and positive views, based upon extensive reading and practice. Its terse and pregnant sentences will not attract and fascinate, but their careful study will amply repay the true seeker after knowledge.

Dr. Ashhurst is far more conservative in his opinions than most of the surgical writers of the present day. With this attitude of his we are not disposed to find fault. So many enthusiasts are eager to adopt every new idea, to regard change as in itself desirable, that it is well indeed that there should be some to insist upon the proving of all things, in order that we may hold fast that which is good, old though it may be. We think, however, that in the work before us there is too scant stress laid upon the importance of the so-called antiseptic system as an element of daily practice. Our own opinion is that its adoption has worked such a change that statistics derived from the earlier time have no longer more than a historic interest or value; that it has vastly enlarged the field of surgery, and increased the safety of every procedure previously known. Yet Dr. Ashhurst has devoted but a page and a half to the subject, and does not, we believe, give it the briefest mention elsewhere. He speaks of it only as used in

operations; of its employment in such dressings as may be called for in the after-treatment, or in dealing with wounds, compound fractures, etc., he says nothing at all. We regret very much to have to note this serious defect in an otherwise altogether admirable book.

One other point we would touch upon. Primarily intended for the use of students, this work must be often consulted by those engaged in the practice of surgery, or in research upon special subjects; to such it would be a great aid if at the end of each chapter there were a list of the authors named, with the exact references to the passages containing the views or records quoted from each.

A noteworthy feature of this, as of the former editions, is the extreme accuracy of the typography.

A COMPEND OF HUMAN PHYSIOLOGY. ESPECIALLY ADAPTED FOR THE USE OF MEDICAL STUDENTS. By ALBERT P. BRUBAKER, A.M. M.D., Demonstrator of Physiology in Jefferson Medical College; Professor of Physiology, Pennsylvania College of Surgery; Lecturer on Anatomy and Physiology, Drexel Institute of Art, Science, and Industry; Fellow of the College of Physicians of Philadelphia. Seventh edition, revised and enlarged. With new illustrations and a table of physiological constants. Philadelphia: P. Blakiston, Son & Co., 1893.

IN his preface the author of this most popular and excellent of compends says:

"In the preparation of a seventh edition of the *Compend of Physiology* the attempt has again been made to still further adapt it to the necessities of medical students during their attendance upon the lectures and in reviewing the subject prior to examinations.

"With these objects in view, not only has the book been revised, but special chapters on the physiological anatomy of the skeleton and the joints, the physiology of muscular tissue and of special muscular groups have been inserted."

THE PHYSICIAN'S CHART-BOOK is a convenient little arrangement devised by Dr. John A. Hawkins, of Pittsburg, and published by Bailey & Fairchild, of New York, which makes it possible for the physician always to have with him, in bound form, a sufficient number of temperature charts, each provided with space for making various notes of one kind or another in connection with the individual case.

CORRESPONDENCE.

WHITE'S OPERATION FOR PROSTATOMA; REMOVAL OF SECTIONS OF THE VASA DEFERENTIA FOR THE SAME DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: On December 12, 1893, I removed the testicles for hypertrophy of the prostate. Is not this the first White's operation recorded in this country?

On December 15, 1893, I removed one and one-half inches of each vas deferens for the same affection. I got the suggestion from Mr. Harrison's case of subcutaneous division of the vasa deferentia mentioned in a recent issue of your journal. The results will be duly published. Very sincerely yours,

FRANCIS L. HAYNES, M.D.

LOS ANGELES, CAL.

NEWS ITEMS.

Eleventh International Medical Congress.—Dr. A. Jacobi, of New York, Chairman of the American National Committee of the Eleventh International Medical Congress, announces:

1. Papers to be read in any of the Sections of the Congress should be announced on or before January 31, 1894, to the Secretary-General, Prof. E. Maragliano, Ospedale Pammatone, Genoa, Italy.

2. The title of the paper ought to be accompanied with a brief abstract of its contents and conclusions.

3. The program to be distributed will contain the titles of all papers announced before August 31, 1893, and since.

4. The reductions granted by the railway companies months ago will be available from March 1 to April 30, 1894.

"Travelling documents" will be sent to the address of every subscriber on or before February 15, 1894; and after that date congressists will have to apply to Dr. Jacobi.

Members' dues are five dollars (money order to Prof. L. Pagliani, Rome); guests' (wives and adult relations) two dollars; medical students no fees. All are entitled to travelling documents.

In the interest of such medical men as will sail for Europe before official cards will have been received from the General Committee, Dr. Jacobi proposes to supply, in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. It is suggested, besides, that a passport may increase the traveller's facilities.

Football Casualties.—On the 18th ult., during a match between the Western Mail Rovers and Guildford Star A, at Cardiff, a player aged fifteen years sustained a fracture of the arm and was taken to the infirmary.—A well-known Chesterfield player aged twenty-four years, died on the 23d ult. from injuries received to the abdomen while playing full-back with Chesterfield against the Derby Junction, on the Chesterfield ground, in the English Cup competition.—On Saturday last a youth seventeen years of age, in a match at Knostrop, had his femur fractured, and was admitted to the Leeds General Infirmary.—On the 28th ult. a student at the Downton Agricultural College, Salisbury, died from injuries sustained in a Rugby match on Saturday last. One of his arms was badly fractured, lockjaw supervening with a fatal result.—*Lancet, December 2, 1893.*

The British Medical Association will hold its next annual meeting at Bristol on July 31, August 1, 2 and 3, 1894, under the presidency of E. Long Fox, F. R. C. P. An Address in Medicine will be delivered by Dr. T. Grainger Stewart, of Edinburgh; an Address in Surgery by Mr. J. Greig Smith, of Clifton; and an Address in Public Medicine by Sir Charles Cameron of Dublin.

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